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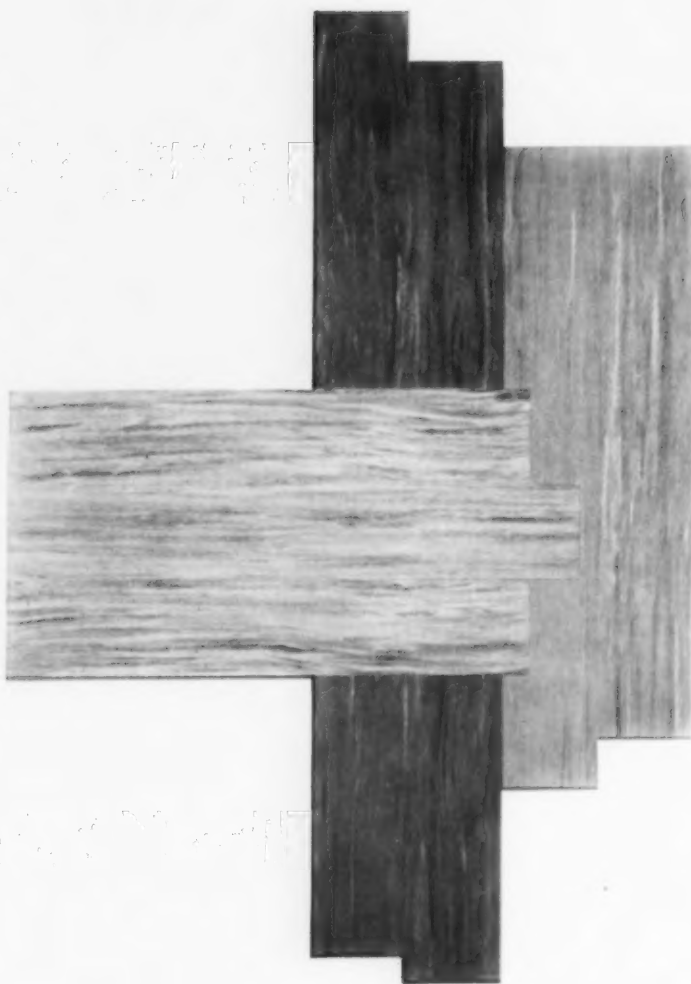
JOURNAL

of The American Institute of Architects.

APRIL 1959

James A. Hatcher
MAIN STREET — LITTLE ROCK, 1960

John Stuart Dillie
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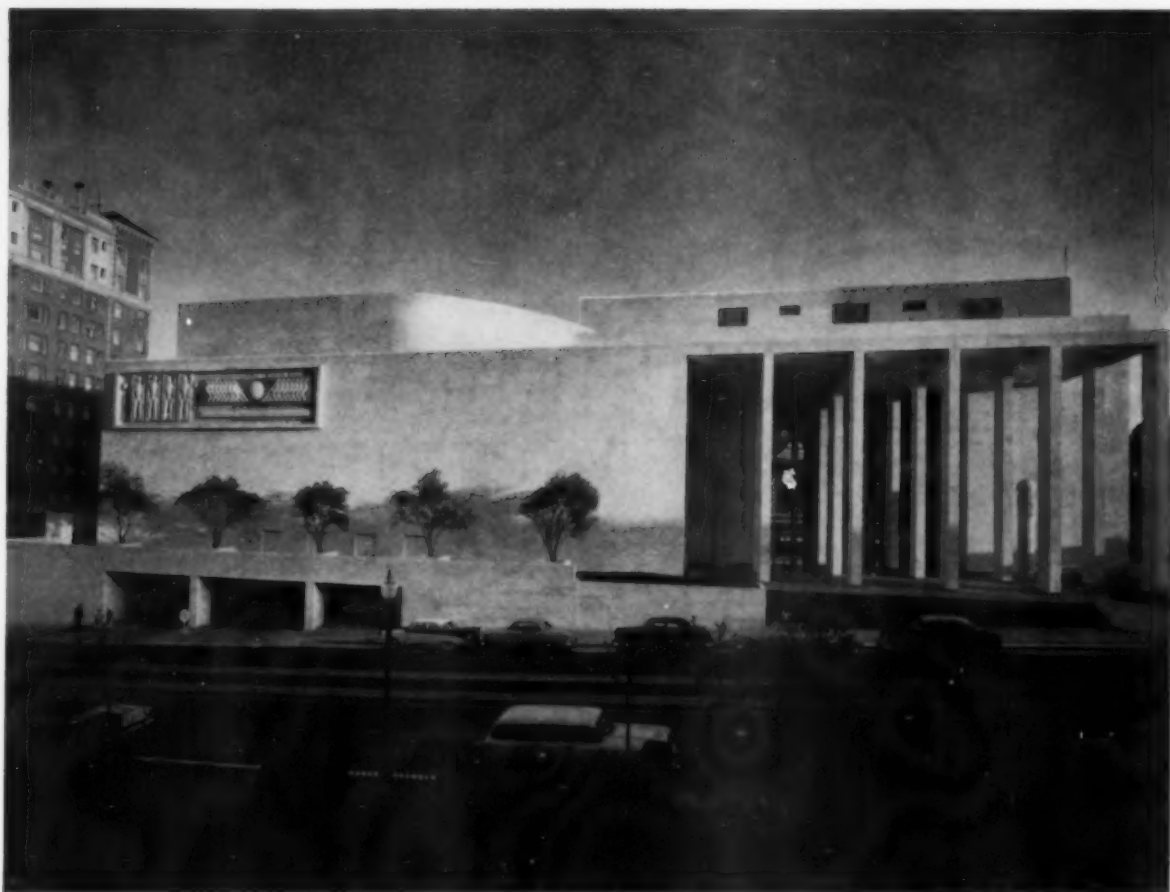
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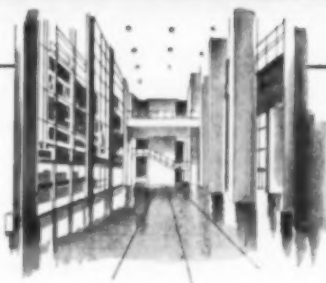
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VOLUME XXXI, No. 4

APRIL 1959

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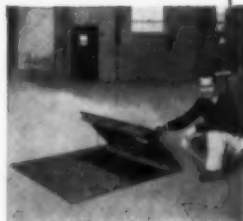
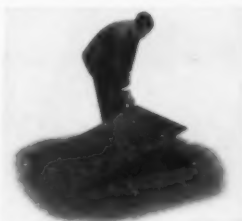
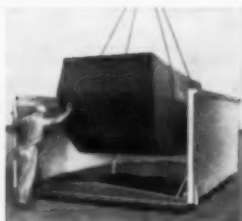
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100 top designers select Crane as
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The Institute of Design of the Illinois Institute of Technology polled 100 top designers, architects and design department heads of manufacturing firms and universities around the world, asking each of them to list the best designed products of modern times. First award for plumbing fixtures was given the Crane Criterion group, represented here by the Criterion lavatory and the Criterion closet and bath on the opposite page.

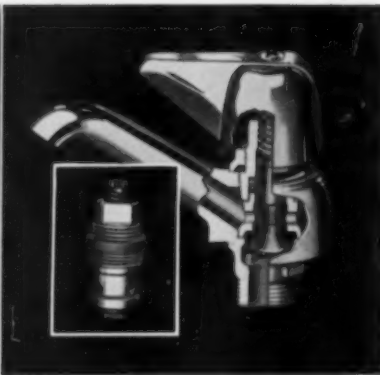




New elegance comes to the bathroom with this new Crane *Crown* lavatory for counter-top installation. Available in Crane colors or white.



With its smart, semi-oval basin and panel front, the Crane *Diana* vitreous china lavatory is styled for the most modern bathroom.



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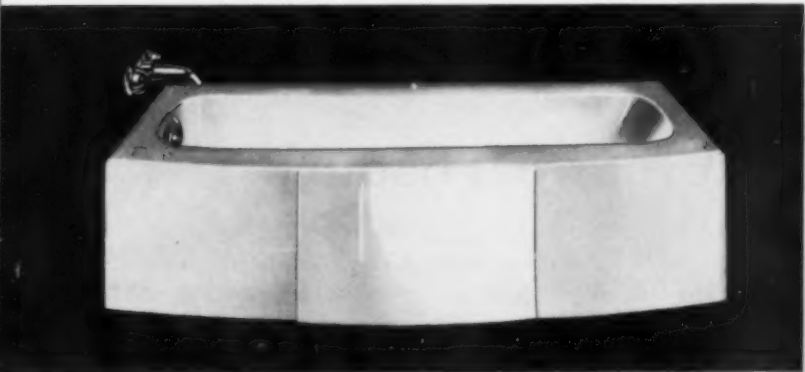
This new Crane *Walsan* off-the-floor closet saves floor space, permits easy cleaning under the bowl. Note the sculptured design. Tank is in the wall, yet easily accessible.



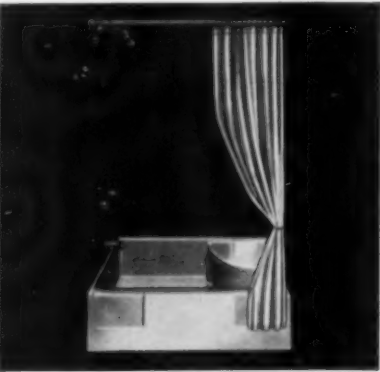
Quality unmistakable! Crane *Criterion* closet of scientific, modern design with hygienic, correct-posture seat. Efficient flushing with quiet whirlpool action.



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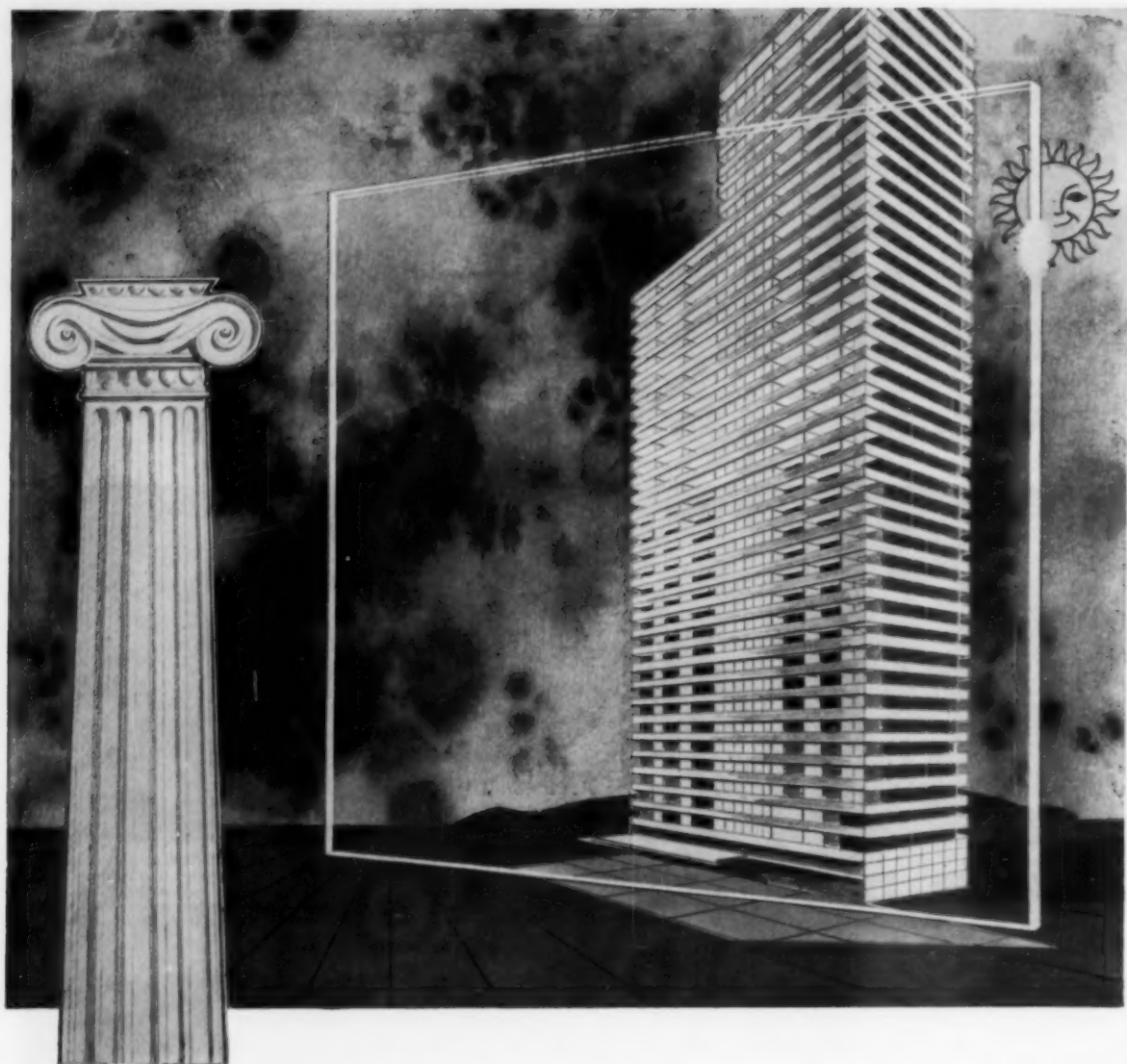
Graceful design and practical utility are joined in this Crane *Criterion* recombed bath of easy-to-clean porcelain enamel on durable cast iron.



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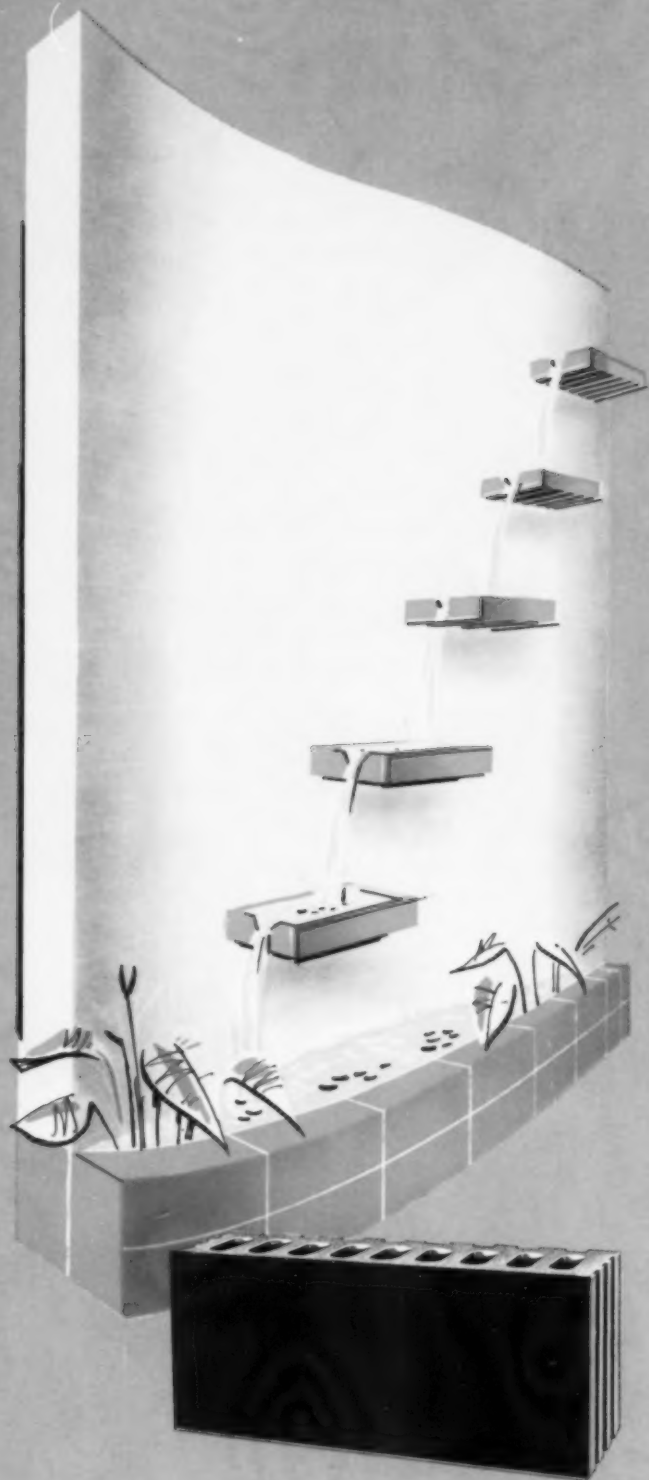
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Letters to the Editor...

EDITOR, *Journal of the AIA*:

Some of us can remember when the Japanese wore clothing unlike ours. They dressed in hand-embroidered silks of striking charm and grace, unlike anything else in the world.

Some of us can remember when the Sandwich (Hawaiian to you!) Islanders were without clothes (but not without charm and grace).

Some of us remember when a Spaniard looked and acted like a Spaniard, a Swiss like a Swiss and a Turk like a Turk.

Those were the days!

Arabs were Arabs, in turbans and tents. England was England, without pretense, in buildings and gardens, in wall, hedge and fence.

New Orleans was New Orleans in every nook and cranny and New England was New England, —oilskins, covered bridges, Cape Cod cottages and the rest.

Then under our powerful salesmanship pressure, the Japanese bought themselves stiff Derby hats and became as other men; our missionaries scared the Hawaiians into covering themselves up with American pants and corsets; the Spaniards and Swiss and Turks all took to chewing the same gum, fighting the same wars and singing the same tunes; England discarded its stage-coaches for motor buses, its rural villages grew into standardized drab mill towns, and its people saw and watched American movies; and New England, ashamed of all that made it interesting, sent its children to Europe or to Europeans to learn music and manners, went to Florida to play, hired foreign professors to teach it international art and architecture and ruined its quaint village centers with 5 & 10's and A & P's indistinguishable from those in N. Y., N. J., Penn., Del., Ind., Va., N. C., S. C., Ga., Fla., Ala., Miss., Ohio, Ill., Wis., Mich., and points West—apologies to Walt Whitman for the poetic form.

By this process the world is no longer to be divided in its culture into picturesque regional provincialisms. It is to work toward a wonderful dead-level of flavorless monotony.

When we fly to France we will put up in an American Hotel with a French chef. When Antoine flies to New York, he will put up in an American Hotel with a French chef; to Hongkong, ditto; to Tahiti, the same!

All men on Earth will wear Fedoras or go without hats entirely. Any variation in style would betray the wearers as "provincial," and besides it is more "practical" to concentrate the machinery on a single type of hat. When the arbiters (internationally recognized as such) decree it, every woman in the world, except for the Fiji Islanders and the Esquimaux, will wear skirts 2" shorter and 4" tighter. The beautiful but hopelessly provincial kimonos of Japan will be woven into rag rugs exactly following one of 3 standard patterns. The starched kerchiefs of Holland (so unfair to the laundries) will be taboo and men and women of all lands will stick their necks into Arrow collars.

Mermaids, if they can be caught, will be slit—so as to have two tails, more like legs, removing the stigma of nonconformity from which they have suffered so long and making them at last acceptable in the pools of fashion.

These matters of clothing are of great importance, but uniformity can be more easily brought about in this area of culture than it can in other areas. In architecture, for instance, changes are not so easily forced upon communities.

To persuade Venice to adopt a rational system of paved streets in place of its old-fashioned canals, might not be easy. To hide the shame of St. Peter's with its meaningless conglomeration of Renaissance columns, balustrades, dome and marble sculp-

(Continued on page 12)

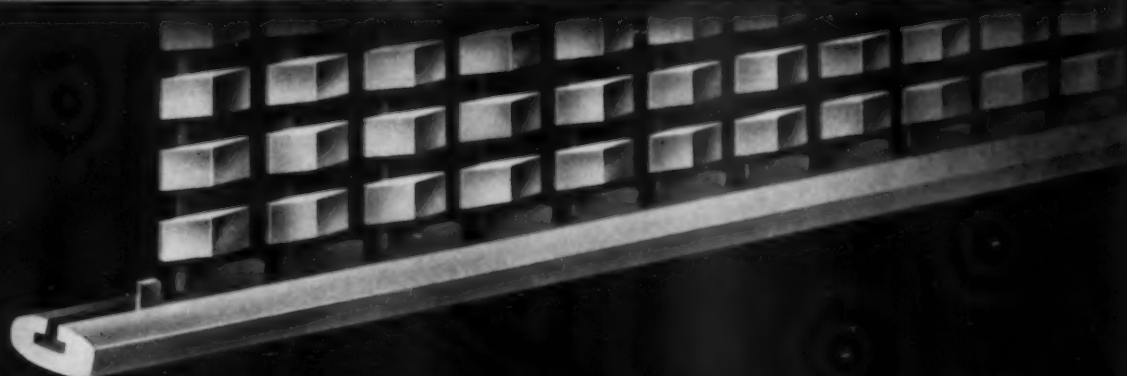


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(Continued from page 10)

tures that look (absurdly enough) like men, would require not only engineering genius but great tact in approaching the proprietors who are often hopelessly tied to ancient forms.

Our National Capitol had to be fought over vigorously before we agreed to have its Eastern facade masked with new padding. Nevertheless the effect of the inspiring nobility of the architecture of the moment far outweighs any antiquated emotions of attachment to the pathetically out-dated travesties of architectural history—the trumperies of the Taj, the heavy sobriety of Hagia Sophia, the over-fretted limestone lace of Chartres and Antwerp, the grandiose immoralities of Versailles and Hampton court, the silly subtleties of the Greek Memorial to Lincoln—all these and a thousand more that clutter the Planet should not be allowed to divert our attention from the *new masterpieces* of plastic and glass, rubber-stamped all over the map, standardized, creative, inspiring, cosmopolitan, triumphantly ubiquitous!

Let us take off our world-wide Fedora and toss it in the air with a gay hurrah (in Esperanto) for the banishment of all that is provincial!

W. R. GREELEY, FAIA
Boston, Mass.

Henry S. Churchill, FAIA, sends us the following editorial from *The Harvard Crimson* for February 9, 1959, with this comment: "Any worries *Us Elder Statesmen* (phooey) may have (*I Haven't*) about the *Younger Generation* should be reasonably dispelled."

Onward and Upward

Since the University has bid for the property where the MTA yards are now located, speculation about the form of the next House-to-be has probably begun. The urbane stateliness of the present Houses is regrettably too costly for the College to duplicate; thus with the realization that the break with tradition has now been irrevocably made, some Housing suggestions for the new era are offered in the spirit of modernism.

It was not without murmured whimperings that the plans for Quincy and Leverett House extension were greeted. Quincy rises like an aircraft carrier in dry dock; and the Leverett towers will reflect a Miami-Beach-hotel flamboyance complemented by a library which combines the best architectural features of a Peter Pan Drive-In and a Shinto temple.

It is in the spirit of Harvard's venerable tradition of eclecticism that the next House should be fashioned. Combining the appearance

of Lamont and the forbidden city of Peking, the new House could perhaps be built as a Bauhaus Pagoda. Corridors could run in circles around a central elevator shaft, while a facing of gilded gargoyles could garnish the outside.

What might be in order is a House that asserts Harvard's debt to the great traditions of European building—architectural styles that must always be viewed in context of a general *Zeitgeistlicheweltanschauung*. One thinks immediately of the ultimate synthesis; a Greek temple with flying buttress. Such a structure would squat gracefully across Boylston Street and express the ever-existent tension between the real and the ideal.

Of course, any new Harvard House will serve as a microcosm for a new, pioneering society, and interested sociologists may wish to observe the leadership patterns among those who decide to cast light into darkness. Any such House must be fit to inaugurate the bold new concept of the Behavioral Baroque.

EDITOR, *Journal of the AIA*:

Having lamented the poor quality of many high-priced architectural books, I was delighted to find you taking the publishers to task in your March issue.

JOSEPH N. SMITH
Miami, Florida

NEW ARCHITECTURAL SCHOOL IN PUERTO RICO

THE LEGISLATURE of Puerto Rico made a special appropriation to the University for an investigation and report as to the desirability of establishing a school of architecture at the University. At the request of Chancellor Benitez, the Institute appointed a special advisory committee. Honorary Chairman, President John Noble Richards, FAIA, Chairman; Alexander S. Cochran, Chairman of the Committee on Education; Trevor Rogers, Director of the N. Y. Region; Buford Pickens, President of the ACSA; Carl Feiss, Chairman of the Committee on Community Planning; and Walter A. Taylor, FAIA, Director of the Department of Education and Research. The special committee spent February 5-10 in San Juan and Mayaguez inspecting the University and conferring with University officers, and with Puerto Rican architects and planners.



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Briggs Tot Water Closets, vitreous china syphon-action models, 10" high, used in the Academy kindergarten.

Balanced design, functional superiority, the modern beauty of color! The architectural firm of Smith, Hinchman and Grylls Associates found that Briggs Beautyware met each demand in their design for the Academy and Convent of the Sacred Heart. For the girls' academy the architects specified Briggs Beautyware fixtures, many of them in color. For your own commercial and institutional work, you'll find that Briggs Beautyware commercial fixtures offer decided advantages. Specify from a complete easy-to-work-with line of well-balanced designs, created by Harley Earl, Incorporated, for Briggs, in fine high-density vitreous china. Rigid quality controls insure that Briggs fixtures meet every specification, as well as every test of the designer's eye.

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This new Mosaic Harmonitone Color Palette is the latest development of The Mosaic Tile Co. It has been called the clearest, most logical and most useful aid to tile selection ever presented to architect, contractor and owner.

Even more important, the new Harmonitone Palette suggests how floors and walls can now be knowingly designed with attractive variations in tile shapes and textures, whether within one "color family" or in combinations of different but compatible colors.

The Mosaic Harmonitone Palette includes nine compatible color groups coordinated to each other. Each represents a color basic to design and construction. Colors within a group are related but deliberately are not matched to each other. Subtle differences in color relate to the differences in texture and finish among the various types of tile.

The variety of hues and tones in each group gives broad selectivity. The character of the colors gives harmony with various other building materials and plumbing fixtures.

There is a planned coordination of colors within a group which enables glazed wall tile to blend with glazed or unglazed mosaics. It also permits the combination of glazed and unglazed mosaics

into patterns. In the modular sizes, various shapes, as well as colors, can be combined.

The new color numbering system is an important part of the Harmonitone Palette development. Each number clearly signifies its exact place in the Palette. This is a big help in the preparation of a simple and accurate color specification.

The 1959 Mosaic Ceramic Tile Workbook for Architects, Form No. 236, gives complete data on the new Harmonitone Palette in addition to much interesting information on all Mosaic ceramic tile. The 1959 "Workbook" is in Sweets.

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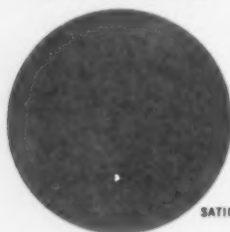
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HARMONITONE TEXTURES (shown actual size)

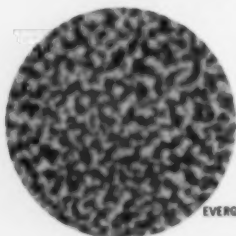
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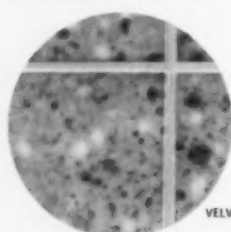


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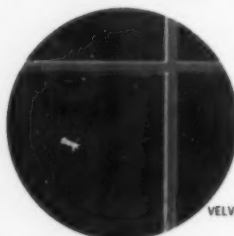


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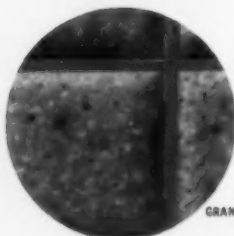
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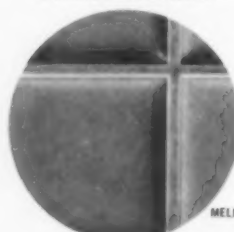


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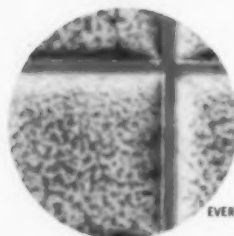


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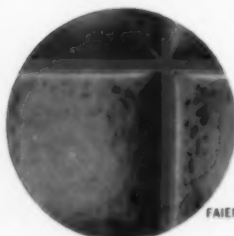
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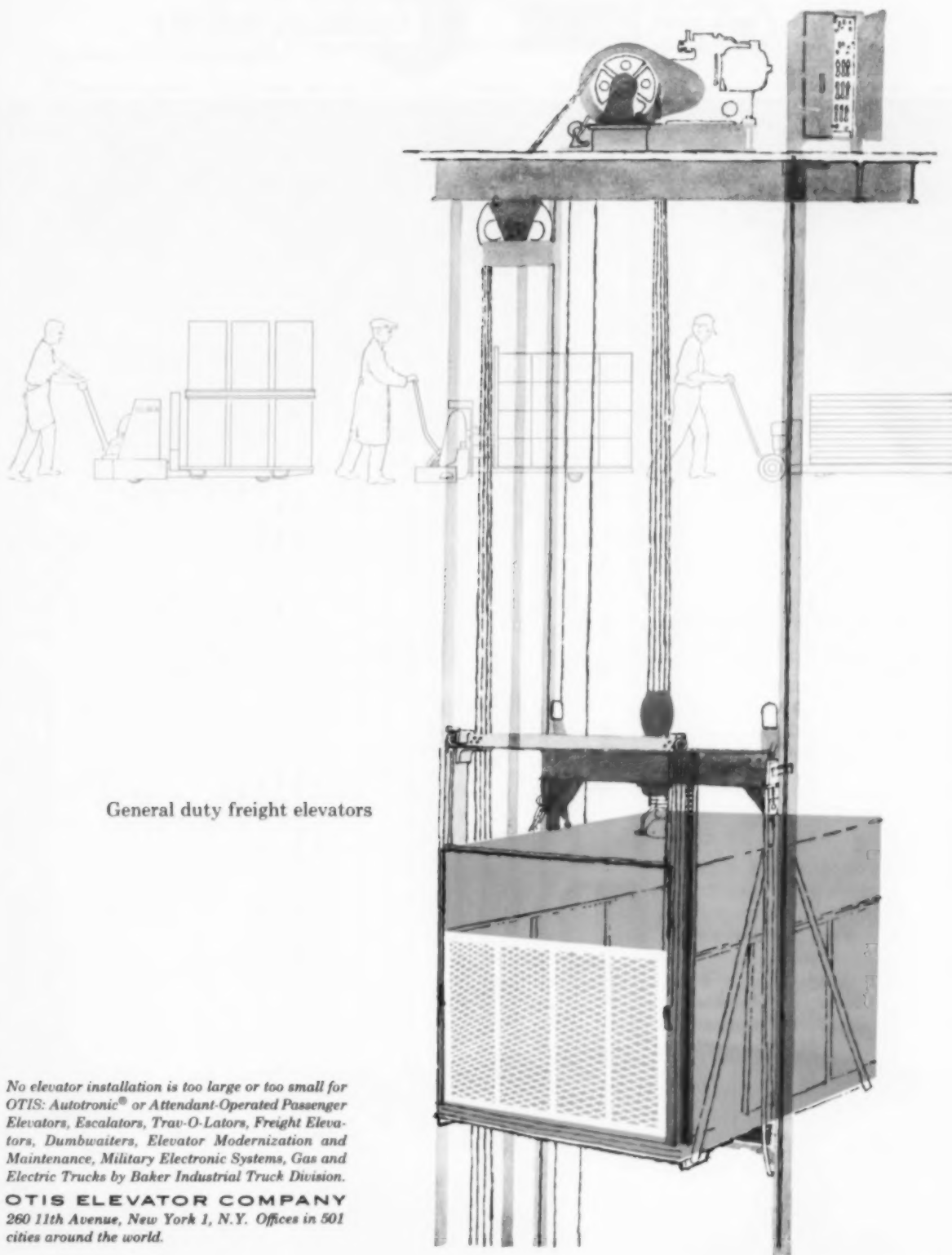
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The Creative Art of Architecture

The keynote address at the architectural session of the 1959 convention of the American Association of School Administrators at Atlantic City in mid-February. The theme of the convention was "Education and the Creative Arts."

AT THIS CRITICAL STAGE in the development of America's culture, it is significant that the Creative Arts have been selected for special emphasis by this convention.

Our brand of western civilization is being scrutinized as never before by the peoples of the world. They are well aware of our nation's achievements in production, distribution and consumption, of our science and invention and of our health and wealth but they often must wonder if such a nation can be seriously concerned with the deeper values which spring from the arts. It may be profitable for us to take a thorough look at one of the arts, the creative art of architecture.

At the outset, we might well begin with fundamental philosophic conceptions. Recently the American philosopher, John Boodin, after a lifetime of searching the philosophies of the ages, distinguished three interpretations of the universe. First the interpretation of *Pre-formation* which holds that the entire universe has been preformed by design, much as a seed, and that all history is but a logical unfolding of a fixed pattern. The second interpretation is that of *Emergence*. Here nothing has been predestined. The universe is a maelstrom of chance,

accident, probability and happenstance with no reasoned structure—only a field of indifference. Variety of form and life occurs by the impact of chance on matter and mutation on life. The ability to survive is the harsh unpredictable judgement of life. There is no formal guidance, no design, and the patterns of history are, as Shakespeare suggests,

"Life . . . is a tale
Told by an idiot, full of sound and fury,
Signifying nothing."

The third interpretation is *Emergence with Guidance or Creation*. In this conception the destiny of the universe was not designed all at once at the beginning of time. Chance is in the universe but the universe is not just the result of chance. Mutation, accident and free will permeate the substance of the universe but there is a principle at work guiding and shaping the emergent possibilities into a dynamic design and destiny. The idea of chaos being ordered through time, measure and physical law by a creative force continuously at work; of the universe "in process", of life being guided from lower to higher forms; of the whole drama having a purpose, however obscured, would seem to satisfy

scientific evidence, the search of history and the religious revelation of western man.

Artists intuitively know this process of emergence with guidance as creation. The painter, selecting from all the possibilities of subject matter, abstraction or expression and working with canvas and pigment, guides the emergent forms into a related picture. The composer, choosing from the sounds in his mind, develops a theme out of the profusion of sounds, with measure, rhythm, variation and counterpoint, a coherent composition. The sculptor, in response to a conception, shapes from all the chaotic volumes and voids, a final significant form. The artist knows full well that creation is not a smooth straight-line procedure. There is struggle both against the resistance of his inert material and the insensitivity of his own genius. He is aware of the emergent nature of much that transpires in his search for perfection and he knows that, in spite of careful guidance, there is much that is abortive, much discarded, many failures.

We have been considering creation in the arts in which the process is largely a simple duel between the artist and his medium in the struggle for perfection. Architecture, by contrast, is no simple creative act involving only the creator and his medium. Although it shares with all the arts the need to form the materials of the universe into an expression of beauty and significance, the elements of architecture are more complex and the methods and disciplines more varied.

The Elements of Architecture

The whole physical universe reveals the principles of function, structure and beauty inextricably interwoven in grand design. It demonstrates, in a cosmic way, these principles of architecture. In the broadest sense the word "architecture" may mean any ordered arrangement of the parts of a system; hence we speak of the "architecture of the universe" or of a statesman as the "architect of a treaty." For our discussion we mean the architect as the chief builder and architecture as the result of building usefully with strength and beauty. Architecture then is composed of these three elements: function, structure and beauty. Structure alone might be merely applied science; structure with beauty, simply sculpture or excellent engineering; and function with beauty might be literature, drama, music or dance. In a strict sense we may rule that unless all three elements are integrated it is not architecture.

Architecture carves out of universal space that which it needs for man's use. It encloses the space with structure and endows it with beauty. Its scope may be a simple shelter or a whole city. Its task is to render the environment of man more enjoyable,

more secure and more beautiful, and its result is to give the life of man more significance and his spirit a touch of the divine.

With such a sublime goal and with the apparent simplicity of combining only three elements into unity, why, we may ask, is there so little that can be called architecture? How can it be that with the history of many civilizations before us, their magnificent architectural monuments still standing in challenge, and with all our advances in science and invention, our wealth and skills, our vast system of education, why is America producing so little of significance in proportion to its opportunities? Perhaps some answers will become apparent as we view the anatomy of the creative process of architecture.

Function

Architecture springs from a necessity of life. Throughout nature those lower forms of life which need a structure grow one, be it a backbone or a shell—or like the hermit crab, borrow one. Higher forms find, contrive or build one, be it a sheltering rock, burrow, nest, cocoon, or like a parasite, use that of its host. Delicate man even with his built-in temperature controls, his ability to pigment his skin and grow a reasonable amount of hair and blubber, found early in life that climate was a problem in his quest for comfort. Having the good fortune to have his brain surrounded by bone, he found his softer parts exposed to insects, predators, the abrasion of a rough world, including his violent fellows. He discovered his simple clothes were insufficient and contrived a kind of rude architecture for his protection and preservation. To the world which he could not understand, he assigned various causes which became spirits, gods and taboos. To propitiate these, he erected his first religious structures. These necessities of the outside world and the inner nature of man have been constantly increasing and expanding from prehistoric times to our complex present. They give rise to our first element of architecture. It is function, sometimes called utility, commodity or use. It is the reason for calling architecture into being. It is the generator of the art. From the cradle to the grave and in the hope of resurrection, the life of mankind demands architecture. This need to control environment is found in all aspects of modern man, his inner nature and his outward communal life. His dwelling, his privacy and security, his education, recreation, amusement and devotion, his commerce, trade, transportation, production, distribution, storage and consumption, his health, retention, institutions, government and his memorials all require a form of architecture.

These types of architecture, each in answer to

a specific activity or need, some millenniums old, some arising in the last decade, are themselves in a state of constant change. At the beginning of this century, preconceived ideas of form and style were superimposed upon any and all functional requirements so that it was difficult to determine the use of a building by its form. Recently, a veritable architectural revolution has occurred and the element of function has been restored as the first principle. As in most revolutions, the matter was carried too far but we are beginning to recover from the hard "functional" architecture with the introduction of grace and warmth.

Technological advances, rapidly accelerating during and since the last war have given more complete control of environment and enabled architects and engineers to supply a host of improvements in modern buildings. Ever more complicated and sophisticated, these mechanical, electrical, acoustical, sanitary, lighting, power and other systems, while affording improvements in the functional aspects, do so at significant increase in cost. In an increasing number of types of buildings our rapidly

expanding and changing civilization has imposed the additional requirements of flexibility and expandability. Finally, the new urban patterns of life and new means of transportation are forcing the re-planning of our cities and it is becoming increasingly necessary to regard the functioning of a building in relation to its position in the municipal plan.

It is the role of the architect-as-planner to study the functional requirements of the project and by his research, experience and skill arrive at a plan for the economical and efficient solution of the problem. Herein lies the first difficulty for the architect.

The requirements for the project are seldom outlined in a clear, concise, definite program. The owner is often tongue-tied, with his purposes vague and obscure. Unsure, indefinite, he is afraid to commit himself lest he be impaled on a chance remark. In this event, the architect perforce essays the role of a psychiatrist and, with his own variation of the procedure, couches the client and, by a series of sessions, extracts a reasonable facsimile of a program.

*The following Resolution commending the AASA convention theme
"Education and the Creative Arts" was prepared by the AIA Committee on
School Buildings and Educational Facilities and passed by the Board of Directors
of the Institute at its meeting early in March.*

WHEREAS, the American Association of School Administrators has been assembled in convention at Atlantic City, New Jersey, from February 14 through February 18, 1959;

AND WHEREAS, the theme for this entire convention, embracing many thousands of men and women dedicated to improving the quality of the education of the youth of our country, has been: *Education and the Creative Arts*;

AND WHEREAS, each of this convention's ten general sessions as well as numerous group sessions and discussions were focussed upon one or more of the creative arts, including the graphic arts, drama, music, poetry, painting, sculpture, the dance, architecture, literature, the cinema and television;

AND WHEREAS, not only did many of the country's ablest

exponents of the arts contribute to the richness of the entire program, but so also did the concurrent exploration of the relation of science and technology to the arts, and the discussion of the nature and value of creativity in education;

AND WHEREAS, this convention celebrated this supremely important theme at a moment in the nation's history when a great share of public attention and public emotion is occupied by fears of the perversion of technology to destructive rather than creative ends, and by concerns over the mounting cost of education;

BE IT THEREFORE RESOLVED that the AIA commends and congratulates the AASA for its faith, its convictions and its courage in thus demonstrating, with notable success, the importance of the creative arts to the education of the future citizens of America.

Sometimes the owner's tongue is too loose. The requirements flow in incessant streams from which there is no escape. The architect with patience usually is able to select from the several possible buildings thus described a pretty fair set of functions. All would be well, except that these functions are changed frequently during planning, during designing, throughout construction and usually, despite the architect's noblest efforts, the building becomes a monument of indecision and bears a remodeled look at the cutting of the ribbon.

Often, too, the owner, in a no-nonsense attitude, freezes on a rigid set of demands which defy all systems of geometry, economy, structure and any known approach to esthetics. The architect in this case must skilfully and gently pry away the irreconcilables and leave the best possible core of a program. To circumvent these three types of owners, architects long ago devised techniques of planning. One current method is to impose modules of functional space which, with all the vicissitudes of change and counter-change, will give some semblance of order and rhythm, however monotonous. Another method is to quickly lump all mandatory requirements, lobby, waiting room, toilets, elevators and stairs in the inviolate center, permitting the owner to lash about the site with the flexible areas.

There is, however, a simple way of predicating the functional solution of the requirements so as to give flexibility in the development of the plan and to permit the full integration of the other two elements of architecture, structure and esthetics. It requires a carefully prepared program of all aspects of the project, its overall objectives, its functions and processes, necessary dimensions, areas, volumes, its flexibility and expansion, its site utilization, its special features, its maintenance policy, its cost and amortization. Its requirements should be given in degree of necessity: Mandatory, desirable, optional and hoped-for. The project thus described has a fair chance of emerging into architecture.

Structure

Structure, with its base in science, is the second element of architecture. Throughout the universe, law apparently undergirds all energy and matter. It holds the planets in their courses, the stars in their nebulae, the cosmos in grand configuration. Within the realm of matter, energy and space the physicist, chemist, astronomer, mathematician and biologist discover the laws of structure. From the sub-atomic particle to the nebulae, from primeval ooze to biological man, everywhere throughout space and life, structure is evident. On our planet, with its omnipresent force of gravity, were formed the geological structures of the earth's crust; igneous, sedimentary

and metamorphic. The biological process emerged from the first protoplasm into the multicellular forms each with its own protest to the gravitational force of the earth.

From the dawn of history, man fabricated by trial and error his first structures of stone on stone and bough interlaced with bough. With experience came the systems of architectural structure: post and beam, corbel, arch, dome and vault. With new mathematics and the science of the strength of materials came the more highly developed systems: reinforced concrete, pre- and post-stressed concrete, the steel frame, stressed skin, space frame, thin shell, laminated wood, suspension systems and now the amazing structural systems for outer space. Always the search has been for more efficient structures, the reduction of weight, the spanning of greater space, the most with the least. At present, structural possibilities are limited not by engineering but by social and economic factors. With this superb array of structural capabilities, the architect begins to consider the relation of structure and function.

The functional plan suggests the structure and the ideas of structure modify the plan. In this state of flux, basic conceptions of the whole architectural statement are germinated, conceptions of a vertebrate type with the structural bones exposed, invertebrate with the skin exposed. From the purpose of the building sometimes symbolic form suggests structure, other times newly contrived structural form carries the major conception of the whole building. In this phase of the creative process of wedding structural form with function, the architect plays two roles simultaneously, Architect-as-Planner and Architect-as-Engineer. It is not a matter of form following function, nor function following form, nor is it a compromise. Out of the study of both function and structure, various possibilities begin to emerge and the principle of guidance sets to work. The thematic content of the architecture is nascent. But we must await integration with the third element before the concept will unfold into the basic idea for the project.

In later developments, the structural system in all its details will involve application of the laws of structure and the pragmatic science of the strength of materials. The proportioning of the members will bring into play nice determination of the distribution of forces and strengths necessary to resist those predicated forces, for a structure thoroughly and efficiently designed will yield, in addition to economy, a certain beauty of its own.

Unfortunately, structures are often designed with a stubborn insistence that because a kind of

engineering logic follows from basic assumptions, the structures are hence honest and therefore must be beautiful. Honesty and forthrightness are not necessarily a guarantee of beauty. It is like saying that all writing is beautiful if the language is honest and forthright. Such language may also be unimaginative, dull, heavy and crude. Engineering without sensitive guidance may have the same faults—and often does.

We may expect further difficulties with the structure. Even the shell of an invertebrate beetle reveals an adjustment here and there to accommodate the organic processes beneath. The structural bones of man are a marvel of adjustment in form to physiological process, the nervous, cardio-vascular, respiratory, urogenital systems, special sense organs and the musculature and most of what goes on beneath the smooth exterior. Although architecture is neither man nor beetle—however it may approach both in complexity—it, no less, requires similar adjustments in its structure to accommodate a growing list of systems, mechanical, electrical, lighting, communication, elevator, pneumatic, security, etc.

One last consideration of structure might be made here since it involves a fundamental dispute regarding the nature of function and structure. One side contends that the nature of architecture is organic in which the process is one of evolving like a growth; the other side says it simply is not so; on the contrary, they maintain that architecture is a construction made up of articulated parts. We might venture that both are right and both wrong, for architecture, like much of creation, embraces both conceptions—and much more.

Beauty

At the point of considering the third element, esthetics or beauty, we are apt to feel on queasy ground, but we shall attempt the difficult. The created universe, suffused as it is with the all-pervading laws of force and form, is brought to our comprehension by the miracle of light and strikes a response of accord in every seeing being. The whole of nature seems to reveal "the perfection of form resulting from the harmonious combination of diverse elements in unity" which is the very definition of beauty. It is this beauty which gives quality, value and significance. In her noblest moods she can enrich, inspire and elevate the soul of man. In her lighter moods she appears pretty, attractive, delightful and gay and touched with humor. Beauty can make a few sounds memorable, a few words immortal and a crude stone a priceless sculpture. Beauty can give a yard of canvas and a skin of paint

the value of a million dollars in the current market.

In the abstract sense we can imagine beauty existing without human perception and appreciation but in our analysis, the receptive mechanism is important—it is part of the difficulty as well! It has been poetically stated that beauty is in the eye of the beholder. We suspect that more of the problem lies behind the eye, in the mind. For in the mind lie the predilections and prejudices. Some must have beauty simply expressed; others demand enrichment. Some seek a mysticism or moral overtone, others see beauty in all things however superficially ugly. A few ask with Plato that beauty be the ultimate perfection of form. The legal-minded are apt to dismiss beauty as a notion too subjective and illusory to be defined, while others recall that it was substantial enough to launch a thousand ships.

To the creative artist, beauty is the result of the patient observation and skillful application of the principles of esthetics. These principles are generally the same for each art, varying in specific terminology. In the visual arts some of them are: form, line, plane, volume, space, mass, voids and solids, color, value, hue, intensity, light and shade. They include the relations of proportion, contrast, balance, symmetry, asymmetry, integration and differentiation. It is from these principles that the artist weaves his spell of beauty. So, too, does the architect, for all of them must be dealt with in his all-inclusive art. But, again as in the case of function and structure, there are difficulties.

The matter of esthetics or beauty is probably the most controversial element in architecture—or any art. Why is there so much dispute about a matter that seems so obvious?

For over fifty years, the arts of western civilization have undergone an accelerated series of convulsions that have left all but the serious student of the arts hopelessly bewildered. In revolt against the attitude labelled "academism," manifesto followed manifesto as impressionists, pointillists, constructivists, cubists, dadaists, the Ash Can School, surrealists, abstractionists, automatists, and abstract expressionists marched across the canvas. And the end is not yet. Something is stirring in the Beat Generation. For fifty years artists themselves have violently disagreed on the essence of beauty. To date the final result is the current technique used to impress an exhausted public, it is called in critical circles, "the shock technique." It is way out—the most! Absolutely no discernible relation to esthetics is permitted. It is the cult of the brutally ugly.

With the artists in turmoil for several generations, the public might be expected to find it difficult to retain any standards of judgment. This has been

somewhat the case in spite of a system of education in which each child is subjected to the arts. Somewhere from kindergarten to the end of college, the discovery is made that art doesn't pay, is unimportant to our society, is not our tradition—and the child, reaching maturity in many things, remains adolescent in the arts. Restless with the times, he cares less for the enduring value of beauty than the certainty that obsolescence guarantees a new model every year.

Architecture in America, while it broke from the same reliance on "academism" (except for a few areas of colonial entrenchment), discarded the historic styles. Architecture, too, has not escaped the esthetic violences. It, too, evidences the same brutal shock-treatment in design. Fortunately there has been the restraint imposed by the ever-present elements of function and structure, for, after all, the buildings *should* work and they *must* stand erect. Today, architects are finding design sources in the verve of the romantic tradition, in the calmness, clarity and serenity of the classic tradition and recently in the neatness, order and delight of the oriental tradition.

Disciplines

Function, structure and esthetics; the architect now has the three basic ingredients of architecture. Out of the emergent possibilities engendered by the interplay of the three elements, his genius selects and rejects, tries and discards, intuitively and invents, researches, analyses and synthesizes. The creative process is in full ferment. The basic conception is drawing into clear focus. The emergent beauty of the whole is in the state of "becoming." To the layman this is dubbed the "Ivory Tower." On the contrary, the creative process is anything but an ivory tower; rigorous disciplines shape both the means and ends of architecture.

First, there is the discipline of *economy*. All art shares the discipline of economy of means. The finer the work of art, the more difficult it is to delete any particle without destroying the unity of the whole. In architecture, each part of the building must perform efficiently its functional, structural and esthetic role in the integrated design of the building. In the strict sense, cost is a measure of the quality of materials and labor. Great architecture is not dependent on price alone, for while the functional-structural-esthetic relationship can reach perfection in a building of small price, all the gold at Fort Knox could not insure the miracle of sublime architecture.

In the exacting discipline of cost, the wise architect specifies methods of construction and materials to achieve the most economy both initially and during the life of the building. This is no easy trick!

With his hand on the jumpy pulse of the labor market, one eye on past experience, and the other on the price index, the third eye on the crystal ball and alert in all directions, this same wise architect knows that a slight miscalculation will either lop off a wing of the building or his own head. Then there is the financial structure of most projects: interest, taxes, rent, maintenance and operation, and amortization which are all vital to the cost.

There is another discipline, that of the *law*. Architecture must conform to public health, safety and welfare. Thorough-going building and zoning codes, health, fire and safety regulations, ordinances and other laws impose their strictures on the design and whole fabric of the building.

Then there is the discipline of *society*. Since buildings are erected for the use and enjoyment of people, their collective tastes and critical judgment affect their architecture. Some nations prefer their architecture dignified, while others prefer theirs more casual. Some like it prim and rectilinear, others like it curvilinear and playful. Again, some prefer it rather tight and restrained while others demand contrast, verve and visual excitement. We should expect differences in architectural expression and appreciation from peoples of different tastes in dress, food, social habits and philosophy of life.

Commonly-held preferences, deeply felt over a long period of time, constitute a tradition. Currently, in the mood of our restless time, the word "tradition" has been given obnoxious connotations. Those who adhere to any thought of tradition are dubbed copyists, imitators and plagiarists, while those who break with it are regarded as geniuses. We would reserve the word "tradition" for the deeper instincts of a mature society. Some groups developed a tradition of beauty itself which enabled them to produce art with apparent ease, for example, the Greeks, Chinese, Mayans, Florentines, Navahoes, Haida Indians, the Saracens, to name a few. Other peoples never seem to have found the main current of great art or architecture and have instead developed literally a habit of ugliness. In the architecture of America, we may have broken the thoughtless habit of the historic styles but we have not developed a tradition of architecture which will unerringly call forth great architecture. Having as yet no firm tradition, the discipline of our society is capricious at best.

If society's discipline is loose, that of the owner-client often is not. The idea, of course, is a client-architect team in general accord, carefully and sympathetically searching for the best within the means. If the building is for the owner's personal use, the *discipline of the client* challenges the archi-

tect to endow the project with unique, distinguishing personal traits. If the building is for the public, the architect becomes the public's advocate and endeavors to please both the owner and public.

The owner-client is more often a group. It may be a husband-wife combination in accord, armed truce, or at war, cold or hot. It may be a building committee—or it may be, as is common in the corporate world, any number of echelons of command and veto hiding behind a second vice-president. The architect, too, is often a group of variously qualified specialists. Groups have the strength of diverse experience but the weakness of compromise and indecision. In any creative effort, extraordinary wisdom is required to maintain one supreme guiding and controlling hand. The democratic notion that ten heads are better than one is a notion in art, albeit a fact in politics. Within the group compromises are often concocted to mollify a loud voice. They do not indicate steadfast adherence to principles. A dedicated committee or board unified in their objectives becomes a powerful tool in the creation of architecture.

The Client

The client is not without problems. Particularly today in school architecture, with its explosive expansion in building, the task of the school board or superintendent in charge of planning is beset with extraordinary difficulties. There seems to be a hard-eyed skepticism coupled with a note of frenzy growing within the public. It is the crisis of too many to be taught, too few roofs to cover them and too little money to meet the demand. Under the impact of crusading laymen, the whole matter of education, about which apparently everyone is an expert, and architecture, about which obviously everyone is not, have become the prime targets for those with a do-it-yourself obsession.

After a school building project has been carefully designed with close coordination between both architect and school officials, weighing all the factors of cost, function, structure and esthetics, working patiently under all the disciplines, and the project has finally reached the stage of the absolute most-for-the-irreducible-minimum, a citizens' vigilante committee of "experts" marches in, cleavers in hand, to remove the "fat." This panic device is excellent as an emotional release, but, tragically, it often slashes the project at the eleventh hour with irremedial scars. It suggests the need for more intensive effort in adult education.

The discipline that society should impose is to require that schools have the customary clean, clear, orderly look with added grace and attractiveness be-

fitting the housing of the greatest of the humanistic arts—the art of unfolding the vision of young America. Critics should avoid the meaningless words "frills" and "lavish." William Randolph Hearst's San Simeon was the last "lavish" building. If a building is worthy of the name of architecture there can be no "frills." Architecture with a frill is a contradiction in terms.

The final discipline is imposed by the *architect himself*. With the dedicated and talented architect this is the most rigorous discipline of all. Normally the diligent architect uses imagination, skill, precision, coordination, diplomacy and good business judgment in bringing all the emergent elements into harmony. The result will be good architecture. Above and beyond this, a special discipline and inspiration within the architect is needed to evoke the unique magic of a living work of architecture. It is this self-imposed goal which leaves the dedicated architect still unsatisfied after all others are overjoyed. While he understands that the art of architecture has created a totally integrated building, whether small and simple or huge and complex, which delights and inspires the soul of mankind, he would know that there is still a judgment beyond. For his act of architecture is of the order of creation by which all things were made, and all the materials he has used, the mind and spirit with which he has worked, have been of a prior creation. Knowing this, he can but hope that his architecture is *en rapport* with the universe.

We have endeavored to follow the outline of the creative process from a philosophical conception through the anatomy of the elements and disciplines of architecture; sometimes taking the high road of thought and other times taking the well-worn lower road of the drafting room—with an occasional detour or two. It brings us to the inevitable question.

America was born with the idea that through the genius of a free people there would spring from this nation an outpouring of the peaceful arts to surpass any nation. We have explored the great civilizations of all history and their surpassing architecture built under alien political systems. Why has not our educated democracy learned how to create a tradition of great architecture?

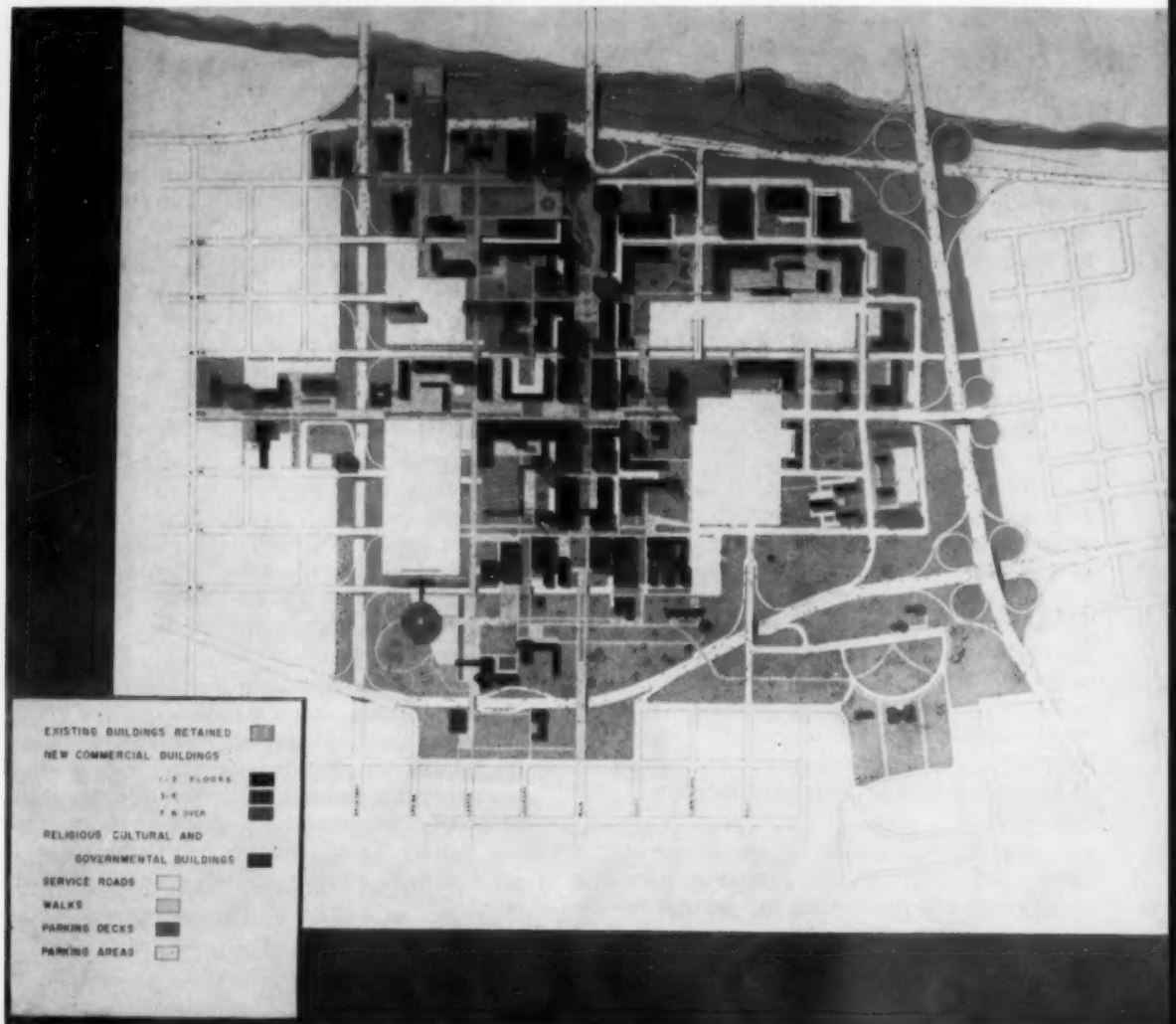
Perhaps the answer to that question may lie here in this room. For it is in your province to create by your art of education the architects, the clients, the builders and the whole fabric of society which can distinguish, demand, create and enjoy the fruits of the art of architecture. And, lest we forget, some fine century hence, some prying archaeologist is going to know whether anybody here did anything about it!

Main Street-Little Rock, 1960

JAMES A. HATCHER

PLAN FOR THE CENTRAL BUSINESS DISTRICT

Photos by Earl Saunders



We present the story of another city whose Downtown replanning was conceived by the local AIA Chapter. The author received his Bachelor's degree in Architecture at the University of Oklahoma and his Master's degree in City Planning at M.I.T. He served as Project Planner with the Metropolitan Area Planning Commission of Pulaski County, and is at present Chief Planner for the Little Rock firm of Wittenberg, Delong & Davidson, Architects.

"MAIN STREET—LITTLE ROCK, 1969," is an idea conceived and developed by the Arkansas Chapter of The American Institute of Architects. Its purpose was to show the people of Little Rock, and the people attending the National Citizens' Planning Conference of the American Planning and Civic Association in June of 1957, what Little Rock might be like in 1969.

The project came into being when a representative of the AIA Executive Committee went to the Program Chairman of the Conference, "Main Street, 1969," and suggested that the AIA present an exhibit of buildings as part of the Conference. The Program Chairman suggested that perhaps it would be more appropriate if the AIA would undertake a "Main Street, 1969," for Little Rock.

This idea was brought back to the Executive Committee, and was adopted as a project for the Conference. The Executive Committee then appointed a Design Committee to take charge of developing the project. Each major architectural firm contributed several persons to the Committee, giving them free reign to get the project started and under way.

The first step was to draw up a list of potential business leaders who likely would be the presidents of the various firms in 1969. These persons were asked to be the clients for which the Design Committee would work.

These business and professional leaders of 1969 were asked "What should be done to our Main Street?" and, after much discussion, these leaders

of 1969 decided that they needed better access to the downtown, proper parking in amounts and locations, and a pleasant environment to encourage people to stay downtown when they got there. Using these recommendations the Committee determined the limits of the area in which to work, criteria for which buildings should be utilized and re-used, and which buildings probably would not be around in 1969. The planning staff of the Metropolitan Area Planning Commission was consulted for floor space projections, projected thoroughfares and expressway plans and advice on land use planning for the Central Business District, and general criticism of ideas.

The land use of downtown was analyzed as to its location, function, and type. The fireproof buildings and buildings of three stories or more were considered as permanent. All churches, public and semi-public buildings, and buildings of historical interest, were preserved in the plan which was beginning to take form. The land use in the downtown area was organized into cluster patterns, consisting of banking areas, prime retailing areas, secondary retailing areas, convention centers, government centers, cultural centers, and wholesale and light manufacturing areas.

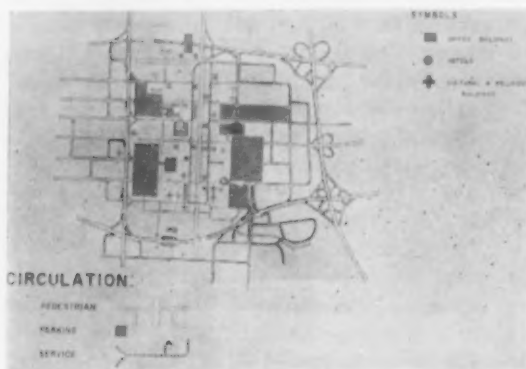
Transportation was a prime problem. Numerous ideas of access to the downtown area for service were considered, and it was decided that the really practical approach was surface access, rather than underground tunnels. Bus transportation was divided into intra- and inter-city terminals, to which buses would come direct and which would be in easy walking distance to the very center and heart of the Central Business District. The layout of the Central Business District in the new plan reflected the best of city planning and architectural concepts. Parking also was a critical problem, and the concept was adopted of providing it near the center of town and expandable to meet the need by means of utilizing level lots, and then, as the need arose, to multi-deck the parking lots, expanding their capacity.

The plan, in its final form, consisted of a Mall down the Main Street area, which was conceived as a leisurely pedestrian thoroughfare through which people could do their shopping, stroll and enjoy themselves in the Central Business District. Access to all buildings was provided for fire and police protection, delivery and other service, and space for parades.

On the river front, which divides the metropolitan area of Little Rock into two large portions, provisions were made for opening the river for river traffic, park and industrial use. In the Central

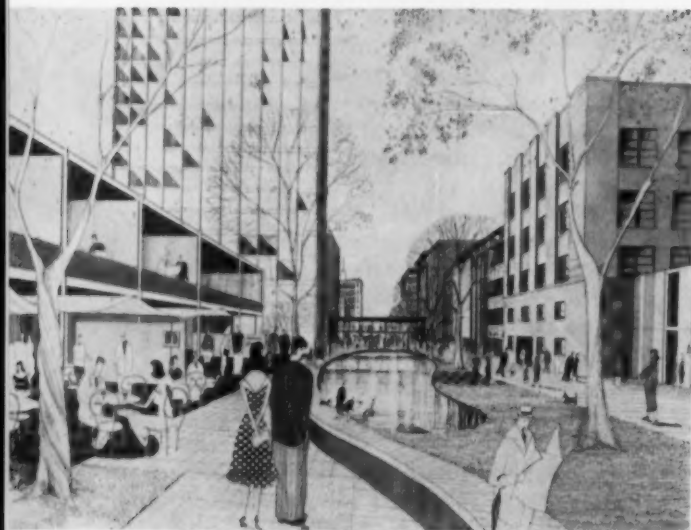


VIEW FROM THE RIVER OF THE REDEVELOPED DOWNTOWN



CIRCULATION PLAN FOR THE C.B.D.

VIEW FROM NORTH END OF MAIN STREET IN 1969.



Business District the river front was devoted to parks, marinas and other recreational and cultural uses. The plan was realistic in showing buildings that probably would be built within the period of thirteen years, the first of which, while it is not located as shown on the plan, has been started.

No plan can be complete in every phase, certainly this one is no exception. The ideas and concepts advanced are the plan's most important contribution to the redevelopment of the Central Business District. The plan, however, has great validity in the ideas and concepts presented, and the stimulus which it provided to the general public of the metropolitan area of Little Rock to visualize a better downtown. An underlying concept behind the plan was not to present a small edition of Dallas, or Memphis, or Fort Worth, but to present a plan for the City of Little Rock which would have a character all its own, and could be a good edition of Little Rock, instead of a poor edition of some other city.

The area was designed, not to be an antiseptic area of tall buildings, but to incorporate a series of intimate areas, changing view and an environment for strolling or shopping, so that doing business in the Central Business District would be a pleasant

EXISTING MAIN STREET FROM NORTH END (RIVER END).



experience and create a real desire to return.

The plan was exhibited at the Conference on June 9, 1957, and immediately captured the imagination of all who attended the Conference, and of the public in general. A film entitled "Main Street, 1969," was made during the Conference by the Arkansas Industrial Development Commission, which tends to supplement the plan exhibited by the AIA Chapter and give it more meaning.

Since that time many other cities have undertaken such plans, sponsored by their local AIA Chapters in cooperation with their planning agencies. The stimulus and influence of the Conference, "Main Street, 1969," and the Little Rock plan, were far-reaching in creating a desire to revitalize the Central Business Districts across the country. If no other purpose was achieved by the Little Rock plan, it was to provide a spark to other cities and this, of course, was the purpose of the National Citizens' Planning Conference, "Main Street, 1969."

What has happened to Main Street, Little Rock since June of 1957? The answer, on the surface is—not much, and the casual observer will find little change from that date.

In September of 1957, Little Rock was beset by a grave educational and political crisis and a social upheaval in the integration of its four high schools. This crisis caused great concern and uncertainty in the business leadership of the community, and several abortive attempts to try to close Main Street for Christmas Malls were undertaken. These failures only tended to strengthen the desire to achieve a revitalized downtown, but the business leadership was not unified, without which any attempt at redevelopment is doomed at the start.

With the plan as a goal, many agencies began setting their sights towards its accomplishment in scheduling programs. The Little Rock Housing Authority is studying methods to develop Urban Renewal Projects in the future that will help accomplish parts of this plan. The planning program for the Metropolitan Area Planning Commission has been so arranged that a comprehensive study of the Central Business District will be started in the near future. A revitalized leadership in the Chamber of Commerce has begun the all-important task of consolidating the leadership of the business community. This became especially evident when, during the past month, the Urban Progress Association was organized for the purpose of aiding the redevelopment of the downtown. It consists of the presidents of the leading department stores, banks, and insurance companies, and with a prominent business leader as its head.

Some of the projects necessary to the develop-

ment of this new Central Business District for 1969 have been undertaken, and some progress is being made in their development. The Riverfront Drive is nearing completion, and, though not up to planning and engineering standards from the standpoint of future needs, it is a step toward the accomplishment of the plan. The Expressway from North Little Rock southbound, which forms the eastern boundary of the area, is now under contract, the bridge is under construction, and clearing is being done on the right-of-way. Municipal bonds have been voted for part of the new Eighth Street Expressway which will form the southern boundary of the Central Business District.

Moves are being made towards reconstituting the Public Parking Authority, legislation for which is now on the books, to help solve the parking problem in the downtown area. The feasibility of Urban Renewal is being studied, as is the possibility of Improvement Districts within the Central Business District to finance those portions which cannot be financed by other means.

It often seems that such a plan will never be realized, but each time we look into the depths of such despair, a new step is taken toward the accomplishment of a dynamic and redeveloped Central Business District.

What does the future hold for "Main Street—Little Rock, 1969?" Well, we will be able to tell exactly only in 1969. In the meantime, however, the future looks bright, and there are a number of factors that lead one to believe that the accomplishment of the plan is entirely possible. Business leaders are realizing that such a redevelopment is vital to their economic preservation. All of the hotels are locally owned, as are the major banks, insurance companies and department stores, and most of the buildings. There is not much absentee ownership which would handicap redevelopment. The features of the City itself are very favorable toward the accomplishment of this plan. Little Rock is unique in that it is the Capital City of the State of Arkansas; geographically in the center of the state; and is the largest city in the state, there being no city comparable in size within 140 miles. It has all the natural advantages of a beautiful setting—forests, rivers, mountains—and economic capabilities and natural resources unlimited. The renaissance in city government which Little Rock has undergone in the past year has already proved to be a vital step in Little Rock's future.

The role of the AIA has been to spark the imagination and develop ideas and this role will become increasingly important during the next short decade, truly a service to the community.

50th Anniversary

The American Federation of Arts

THE AMERICAN FEDERATION OF ARTS will hold its 50th Anniversary Convention, April 23-25, in Washington, D. C.

The AFA was founded in 1909 as a non-profit educational institution to foster the production and cultivate the appreciation of art in America. The Golden Anniversary Convention will bring to Washington a thousand members of the organization, and some of the world's authorities in both arts and sciences. The theme of the three-day conference will be "Action in the World of Science."

Two of the highlights of the convention will be a comprehensive architectural exhibition and a showing of Impressionist and Post-Impressionist European art. The former will define the role of leading architects, and review the important architectural milestones in our time. This exhibit, "Form Givers at Mid Century," is being prepared by the AFA and will be sponsored by *Time* magazine. Its opening at the Corcoran Gallery of Art will coincide with the opening of the convention on April 23rd.

Behind this exhibition is the realization that architecture—whether it is "the great spirit" as conceived by Frank Lloyd Wright, or a cultural confluence of technology and artistic factors—has reached a moment of high fulfillment in the United States. Significant form has, indeed, been achieved and can be judged, but new problems of both form and function now loom on the horizon.

Juan Mascar



UNION TANK CAR
ROUND-HOUSE
BATON ROUGE, LOUISIANA
BUCKMINSTER FULLER,
ENGINEER

ENTRANCE TO SEAGRAM BUILDING
NEW YORK CITY
MIES VAN DER ROHE, ARCHITECT

The AFA asked *Time*, as its contribution to the 50th Anniversary, to sponsor the exhibition and to assist in assembling material that will convey the achievements of architecture at mid-century. Among the architects, firms, and buildings to be featured are: Frank Lloyd Wright, The Solomon R. Guggenheim Museum, New York, 1959; Mies van der Rohe, 375 Park Avenue, New York, 1958-59; Walter Gropius, Baghdad University; Marcel Breuer, Pier Luigi Nervi, Bernard Zehruss, UNESCO Secretariat, Paris, 1959-60; Eero Saarinen, TWA Terminal, Idlewild, New York, 1960; Skidmore, Owings and Merrill, Banque Lambert, Brussels, 1960; Wallace Kirkland Harrison, Presbyterian Church, Stamford, Conn., 1958; Edward D. Stone, The United States Embassy, New Delhi, India, 1958-59; Philip Johnson, Glass House, New Canaan, Conn., 1949; and Buckminster Fuller, The Union Tank Car Round-House, Baton-Rouge, La., 1958.

Works by Louis Sullivan, as an early pioneer, Richard Neutra, Alvar Aalto, and Le Corbusier will also be included in the show.

The exhibition will focus primarily on one major work by each of the featured architects and will include models, both color and black-and-white photographs and small drawings in plan and elevation, to be accompanied by appropriate text.

Around the featured buildings will be grouped relevant previous designs which will serve to elucidate the main work and place it in historical perspective. Actual materials, such as glass, grilles,

bronze mullions, concrete blocks and other elements used in construction will be included, as well as furniture designed by some of the architects.

Pietro Belluschi, Dean of the School of Architecture and Planning at Massachusetts Institute of Technology, and a Trustee of the AFA, has written the preface for the exhibition catalog. Organized by Cranston Jones, Associate Editor of *TIME*, the show is being designed by Gyorgy Kepes, Professor of Visual Design at MIT.

Follow the initial showing at the Corcoran Gallery, "Form Givers at Mid Century" will be seen during the summer at the Metropolitan Museum of Art in New York. Subsequent showings will be held in Boston, Pittsburgh, Minneapolis, and Richmond, during the first year of circulation.

The other important exhibit honoring the 50th Anniversary of the AFA will be held at the National Gallery of Art from April 25, through May 24.

This exhibition, "Masterpieces of Impressionist and Post-Impressionist Painting," will consist of 50 paintings by 17 artists, including works of Monet, Renoir, Degas, Toulouse-Lautrec, Cézanne, Gauguin, and Van Gogh. A number of well-known paintings will be included, but there will also be a number of paintings which are less familiar to the public.

These paintings will come from 32 private collections in the United States. This will be the first time the National Gallery has assembled a loan exhibition of privately owned European art.

As the American Federation of Arts begins its second half century, it is the only national art organization which includes in its membership all the chief elements in the art world: museums, college and university art departments, schools, artists, teachers, dealers and collectors. It has 438 chapters in forty-four states.

The AFA fosters cooperation among individual art institutions and assists them by making available the best knowledge and resources of the art world. It organizes and circulates art exhibitions both in America and abroad, and promotes the growth of art activities in areas where they are not yet adequate. The AFA also initiates special projects in the general interest of art in America and promotes greater understanding among nations through international exchanges.

These activities of the AFA do not compete with those of individual museums or institutions, but rather assist and complement them.

The *Journal* commends the two outstanding exhibitions to any members coming to Washington, and extends to The American Federation of Arts its heartiest congratulations on its 50th Anniversary.

W. N. L.

Ezra Stoller





GEORGE A. LUNDBERG

The Social Implications of Architecture: II

I HAVE ALREADY referred to the special position of the architect among the professions in that he is a professional man with one foot in applied science and other in the fine arts. This divided allegiance sometimes gives rise to a curious schizoid disorder because of the unfortunate gulf which today separates the arts and the sciences. One of the most significant aspects of architecture is that it may serve to obliterate that split. If so, this would be a matter of great social significance.

The separation of the "fine" and the applied arts and sciences is perhaps a rather recent development in man's long history. The caveman's wall pictures, and the carvings on his club, were regarded by him as practical in the same sense that the other features of his weapons were practical. That is, he appears to have believed in the relevance of his drawings, his carving, his dances, and other artistic activities in contributing to the success of the hunt, the battle, and the relief of illness. Carvings on weapons and implements, tattooings, and woven patterns which the outsider may regard as purely artistic decorations are frequently fraught with profound magical import. Here the practical and the applied arts were one and the same.

Applied science and the machine constitute a new magic which has

largely taken over many of the more directly utilitarian functions of primitive art. As a result certain arts have in modern times become more or less esoteric leisure activities affording emotional outlet and self-expression but having no direct connection with so-called practical affairs. On this basis a distinction has grown up between the "fine" and the "practical" arts. Indeed, the term "art" is in common usage now employed to designate only the fine arts. If we look at this distinction in historical and sociological perspective, however, it must be clear that these categories, however useful for some purposes, are superficial, and merge into each other by imperceptible gradations. Consequently, a consideration of art in the life of a community must not fail to recognize the fundamental way in which esthetic and artistic elements are entangled with social and economic factors in modern, as well as in primitive, society.

The role of such arts as are involved in architecture, landscaping, sanitation, advertising, commercial design, and the illustrated magazine and newspaper has been grossly underestimated or ignored by many of the devotees of the "fine arts." Indeed, there is a small group of professional practitioners of the more abstract and esoteric forms of art and a somewhat larger group of

their followers, consisting of dilettantes and posers, who even deny that these "commercial" products can be properly classified as art. Yet any consideration of the arts in the life of a modern people which neglects the movies, illustrated newspapers and magazines, cartoons, posters, other pictorial advertising; commercial design, as represented, for example, in the automobile, would simply miss nearly the whole picture so far as the art of the masses is concerned. Music, drama, painting, sculpture, and crafts are, to be sure, still practiced and patronized for their own sake by large numbers, but the numbers are proportionately small when compared to the vast following which commercial and practical art, including architecture, commands. The latter is a daily and hourly influence, whereas contacts with the fine arts, with the possible exception of music, tend to be for the great majority only an occasional experience.

We still cultivate the fine arts "for their own sake," as the phrase goes, although we no longer believe they have a magical significance as was frequently true in earlier cultures. What will some day be scientifically demonstrated, I think, is that even those artistic activities and products that are today called the "fine" arts have a practical significance in satisfying certain

emotional cravings, which, while differing widely in content in different stages of civilization, have one consistent and universal element, namely, the resolution of certain tensions which arise from the incongruities and contradictions of the culture in which we live. Herein lies the social significance of the artistic side of architecture.

Yet it is here that we encounter an important difference in the architect's authority in the two aspects of his profession. In his capacity of applied scientist or engineer, the architect speaks with an authority which somehow is lacking in his pronouncement as artist. Why this difference? Aside from the prestige of science, which can be invoked in engineering questions, there is the all-important possibility of subjecting most arguments on engineering questions to some kind of objective tests, the validity of which nearly everyone is constrained to concede. The required size of a steel beam, the adequacy of a given foundation, and the physical adequacy of proposed structural features are within fair limits scientifically testable in a way that the artistic adequacy is not. This is not to say that there are *no* artistic standards or that those standards are at present objectively less accepted and demonstrable. Herein lies a real dilemma for the architect. His artistic proposals are subject to a type of challenge from clients and the public that his engineering proposals are not. He may succeed in part in defending the artistic aspect of his work in the name of their functional superiority. But the mere conformity to a well-established tradition with status value is likely to appear to many as a more important standard.

Here the architect runs afoul of a situation which has engaged the attention of the sociologist from the very beginning, namely, the phenomena of habit, fashion, custom, and tradition. It appears that the arts are very much more custom-ridden than are the sciences, and the business and industrial institutions to which science has given rise. The industrialist in the modern com-

petitive society has no sentimental or other commitments to doing things as his ancestors have done them. He sheds no tears when an old machine is replaced by a new and more efficient one. He does not cherish the idea that what was good enough for his father is good enough for him when it comes to industrial improvements. He is constantly streamlining even his old machines in order to make them at least look more efficient and more beautiful. The arts are usually more conservative, and, with due respect for modern and recent developments, there is perhaps no field in which the conventionality of the arts can better be illustrated than in architecture. And at least part of the reason must be sought in the absence of criteria of excellence in the arts of the demonstrable and compelling character that is provided by science in the engineering field. How, then, can the architect strengthen his artistic authority?

HE CAN BEGIN by improving the vocabulary and the language in terms of which he attempts to communicate regarding his artistic ideas. The literature of art and esthetics is perhaps at its greatest disadvantage as compared with the literature of science in that the latter employs a terminology which is clear and operational in its referents. The language of the artist when he talks about art is likely to be highly subjective and ambiguous. Now we know there is a close relationship between clear thinking and clear talking. The concepts which the architect uses in discussing the artistic side of his work are not as definite as the concepts he uses in discussing the engineering aspects of his work. It follows that the former will be only vaguely understood and will become a subject of controversy. Such architectural terms as "unity," "rhythm," "proportion" and "honesty" must be assigned rigorously specified meanings if objectivity in discussion and application of artistic ideas is to be secured.

We here come face to face with what is perhaps the most funda-

mental connection between architecture and sociology, namely, the desirability that the architect should know *what* he is building as well as *how* to build. This means that the effective architect must be closely in touch with modern social ideas and trends. Let us take only a single example. How can an architect, be he ever so competent in technical respects, design even a jail unless he is acquainted with current thinking about penology? If the current penological thinking is that a jail is a penitentiary, is primarily a place for the punishment of evil people, or is a storehouse for human wreckage and refuse, that calls for one type of design. If the thought is that penal institutions are a kind of hospital where sick people are treated in the hope of returning substantial numbers to normal life, that calls for very different design.

In this sense, the social significance of architecture is very great. Much depends on the degree to which the architect is abreast of, or preferably somewhat ahead of, modern social thought. Buildings are a relatively stable product. They last longer than automobiles, clothing, styles of dancing and many other products. A society may thus find itself hopelessly saddled, as is apparent on all sides, with antiquated and obsolete buildings wholly unsuited to modern times. To be sure, there are those who point out that at the present rate of social and scientific technological change there is no solution of this problem except frankly to adopt the attitude and the techniques of the automobile industry and go in for mass production of avowedly temporary habitations following the same rule of fashions as govern many other commodities we consume. Whatever may be the possibilities and advantages of this solution for the individual private house, its applicability to the larger aspects of community and city planning and institutions is far from clear. For some time to come, at least, both private and public buildings will have relative permanence. To the extent that this is so, it will be im-

portant that architects should be well informed regarding modern social trends, especially if they aspire to lead rather than merely to follow the conventional ideas of the time.

This imposes a considerable burden upon architects, who are already expected to be artists as well as engineers. The development of the social sciences should be of considerable assistance to architects in this situation. For it is the avowed purpose of these sciences to predict with increasing reliability the trend of social events, including technological inventions and their repercussion on social and political life in general. Some signs of this kind of research are beginning to appear and I turn now to a brief discussion of this material.

I SHALL SPEAK chiefly of research in the social sciences. I should like to say in passing, however, that some excellent research in botany and zoology has, I think, interesting implications about the question of crowding and privacy, which in human society must always be a concern of architects. I have dealt with this subject to some extent in my book, "Foundations of Sociology",³ and will confine myself here to quoting only a paragraph or two from that work:

"It is interesting to note in passing that sparseness of population as well as density seems to be related to the rate of reproduction apart from any question of subsistence. Thus Allee says:⁴ 'It is easy to demonstrate that overcrowding lessens the rate of growth of organisms. More recently evidence has been accumulating that undercrowding frequently has the same effect. Evidence is presented on this point in such widely different animals as mealworms, fishes, and mice. Similarly, with population growth the harmful effects of undercrowding have recently been found for protozoans, crustaceans, and beetles, as well as the ill effects of overcrowding.'

"The mechanism by which crowding affects reproduction in man, if at all, remains to be demonstrated conclusively. The complexity and indirectness of the nexus, if any, waits upon (1) the development of quantitative scales for a large number of psychological and sociological factors and upon (2) some adequate method of factor analysis through which the influence of a large number of components can be unscrambled."

If conditions of crowding and sparseness so profoundly affect so basic a behavior trait as reproduction in the very simple forms of animal life, what may not be the influence of the conditions on personalities and the social characteristics of human beings?

Of course, we need definitive research as to what extent crowding and sparseness of population affect social characteristics and behavior of human society reproductively and otherwise. But the rather extensive data on the lower animals strongly suggest that such influences may be even more important for man. Also, it is not an unreasonable hypothesis that in man, the effects of crowding or sparseness may influence many other behaviors as well as reproduction. Since the answer probably differs with the stage of culture in question, and especially according to different temperaments, of which there are a vast variety, we need sharper studies of this interesting subject.

Turning now to social research in contemporary human society, we find a number of studies bearing upon the relation of mental health to housing, and crowding to mental health. First of all we note the studies of F. S. Chapin in Minneapolis.⁵ His conclusion is that "adequate physical layout of dwellings cannot cure mental ills already in existence (schizophrenia), but it may prevent further development in the sense that physical layout does act as a reinforcing agent to personality trends already structured. Neither can adequate physical layout of the dwelling produce, in the

sense of originating them, new desirable personality traits." (p. 164)

A radically different type of study is reported by Festinger⁶ and his associates. In this case the objective was to discover what relationship existed between the arrangement of houses in a housing project and the social life of the inhabitants. The housing project was built by M.I.T. for occupancy by married veteran students. It consisted of a hundred single or semi-attached small houses arranged in courts consisting of from eight to thirteen houses. Each court was a U-shaped affair with the houses facing into a grassy area. The open end of the U faced on the street that bisected the housing project. The project was rather unusual in that a great degree of homogeneity existed among the residents who were all married veteran students at M.I.T. There was no freedom of choice of particular dwelling unit within the project, since all were assigned to houses in the order in which their names appeared on the waiting list. The study I am describing began soon after the project was fully occupied and consequently was able to trace the development of friendships and informal social groups quite thoroughly.

It was found that the two major factors affecting the friendships that developed were (1) sheer distance between houses and (2) the direction in which a house faced. Friendships developed more frequently between next-door neighbors, less frequently between people whose houses were separated by another house, and so on. As the distance between the houses increased, number of friendships fell off so rapidly that it was rare to find a friendship between persons who lived in houses that were separated by more than four or five other houses. People tended also to make friends with those whose houses faced their own. Because of the arrangements of the courts in the housing project, these two factors combined to make it easy for social groups to develop within a court and difficult for social groups to develop on any other

basis. Each court in the project became a more or less cohesive group with a social life of its own. The relatively little social contact that did exist between one court and another was almost entirely limited to contacts between adjacent courts.

There were instances in which the site of the project had more profound effects than the determination of associates. Indeed, on occasion the arrangement of the houses severely limited the social life of the occupants. It will be recalled that the open end of the U on each court faced the street that bisected the project. To make the street appear "lived on," ten of the houses near the street had been turned so they faced the street rather than the court area like the other houses. This apparently small change of orientation had a considerable effect on the lives of the people who, by accident, happened to occupy these end houses. They had less than half as many friends in the project as those whose houses faced on the court area. The consistency of this finding left no doubt that the turning of these houses toward the street had made involuntary social isolates of persons who lived in them. In short, the decisions of the architect in designing the house

and laying out the site for a group of houses determine to a large extent the nature of the group memberships that will be imposed upon the residents of the houses.

In the briefest possible summary, what I have tried to tell you amounts to this: You live and work, as do we all, in a society that is motivated no longer primarily by physical survival, but by social prestige. This consists of a striving for status, by whatever means or criteria this may be achieved. The criteria are frequently quite contradictory and non-rational, especially in those departments of culture least touched by scientific knowledge. This means that in our time artistic and esthetic aspects of culture are likely to suffer most from non-rational influences, with resulting incongruities, contradictions, and frustrations. In my opinion, the principal social significance of architecture and architects is to reconcile these incongruities, resolve the contradictions, and relieve the frustrations. They will succeed in this when they are able increasingly to justify their artistic ideas on scientific grounds. This depends in turn on increasing research on human and social correlates of particular artistic, including architectural, forms.

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New York, N. Y.

This is the way our city goes:
All the backyards are "Patios."
Isn't it charmingly pseudo—Latin?
The Patio (Brooklyn, Bronx, Manhattan)
Is tastefully trimmed with cigarette butts,
Sweepings, peels and rinds of nuts.

This is the way our city is:
Many romantic "Terraces."
If it's enough for *one* to sit on
It's something for someone to make a bit on.
Big terraces fetch a bundle of loot
And are always finished with rich black soot.

These are our architectural glories:
A City of Homes of 21 stories!
I look at *your* walls, you look at *mine*,
I see your dishwasher when we dine—
If we've a "luxury suite" which is rich in
Delicacies like a "windowed kitchen."

This is a city—*que voulez vous?*
A panel of sky and a tree's a View.
A skinny flat by a murky stream
Is the height of a fashion addict's dream.
The City Planner brightly plans.
And the Voice with a Smile is the real estate man's.

ELISE JERARD

"Something is rotten in the State of Denmark"

Sir Albert has long been one of England's most distinguished architects and scholars.

He is a former President of the Royal Academy, former Vice President of the RIBA, and was Royal Gold Medallist in 1947. At present he is Professor of Architecture at the Royal Academy.

It is well known that he views with some alarm the direction taken by contemporary architecture.

He here cautions us not to turn away from the age-old standards of taste and grace in architecture.

THE FINEST REMEDY for over-confidence is to meditate on the uncertainty of life. When we reflect that the world existed before we were born, and will go on when we have ceased to be, we begin to appreciate what humility means.

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Some architects regret they were not alive in the fourteenth century; others would have preferred the period of the Gothic Revival; younger folk look forward with anticipation to welcoming the year 2000, forgetting that they will be pensioners when that era arrives.

Humanity thrives by experience and profits by the contributions of other times. In self defense each generation must add something to what exists, modifying all that the past offers but wisely respecting all that is gracious.

Time was when the finest works of man were esteemed as exemplars; now they are voted commonplace. Yet it is a fact that curiosity about the past led to the Renaissance and the evolution of the

modern arts and sciences. The incentive was to advance but the motivating force was to overcome the sting of death. From well authenticated records we know a little of the pageant of human life from early times, sufficient perhaps to avoid obvious mistakes. But who can say in all honesty that he or she desires to anticipate the future? The truth is we would like to absorb learning and yet be sufficiently up to date to prolong our individual lives indefinitely. What everyone dreads is being outmoded; the sphinx answer to this is "You will be served in turn." The desire to live a useful and interesting life is something more than an abstract principle, it is shared by all. To obtain this result politicians promise more than they can perform, planners indulge in statistics which have no stability, nations covet world markets, and eventually there are wars. During the past half century we have experienced almost continual warfare, or preparation for conflict. It is a condition of affairs which

has affected the whole world. We have the melancholy appearance of ruined cities which is repellent to the understanding; there is the factor of squalid untidiness so eloquent of decline. What is even more surprising is the apathy of citizens to imaginative civic well-being. Yet the standard of living has been raised artificially and there is no turning back financially.

In the sphere of architecture a factory style has been formulated which has given an impress to every type of building. Character for specific buildings is unknown but this expediency is met by labelling as required. It is clear that the highly concentrated state of society today is not sympathetic to the finer arts, neither can a society which is tired impart fresh spirit to those who follow the skilled trades. Reference to the masterpieces of building, of sculpture and of painting proves all such to have been in harmony with the periods which called each specific art into being.

At one time buildings were simple and comely, the materials were appropriate and colorful, the detail interesting and individual. Sculpture was idealised, not distorted; painting, whether portraiture or landscape, was such that the untutored eye could read the meaning without printed explanations. A quarter of a century ago a professor said in a lecture "British or American architecture will never be fine again except in isolated cases." Since these words were spoken the office-cum-factory style has become universal. Craftsmanship has been suppressed and prophetic warnings from Emerson and Carlyle to Lethaby have been ignored. Vulgarly has been accepted as a sign of progress and freedom. It is, however, in the mass training of architects that the teaching of architecture breaks down. Far too many students are received in the schools, while the lowering of esthetic standards offers an index to the debasement which is now so apparent. Is it really fair to encourage young men and women to train for a prospective career in which they are foredoomed to be helots to the State? Throughout the United States and Great Britain craftsmen are practically nonexistent and this is one of the reasons why contemporary building is so spiritless. The suppression

of the staple crafts, however, is not confined solely to the building industry. It is also apparent in the architectural profession. At one time the craftsmanship of the draughtsman was an inspiration to workmen. There is evidence of this in the drawings prepared by the men who assisted Butterfield and Street, and later Goodhue in the United States. Those who recall the drawings made in the offices of Leonard Stokes and Edwin Lutyens, or the office of McKim, Mead and White, regret the mechanization which has destroyed individual expression. Here is to be seen one of the causes of apathy in the workshops.

It is to be regretted that the once noble art of architecture should be subjected to whims which are inimical to its health. Is this not explanatory of the fact that art like humanity is subject to various ills, both bodily and mental? Architecture for instance can suffer from pernicious anemia, it can have physical defects, distortions of body, lapses of memory and complete disintegration. Clearly there must be a renaissance of the basic principle of architecture if cultured taste is to survive. To achieve this there should be unity of outlook, mutual exchange of viewpoint and above all the acceptance of an ideal. We have still to determine what the ideal should be. The futility of waiting for ideas should be impressed on the minds of students. It is not to be expected that the whole adult population of any country could be converted overnight to an ideal. But what is extraordinary is that the encouragement of taste among the young should be so precarious and that professional authority should sanction methods of training which are opposed to common sense.

There is a law which should dominate the creation of buildings, and this is the law of grace. To devise a building which is graceful is to endow it with a value beyond price. For architecture should be anonymous, not personal, owing allegiance entirely to experience. The finest work does not spring into being at command; it does not emanate amidst the Babel talk of schools; on the contrary, it shuns notoriety, attracting the humble and the conscientious.

THE CHANGING FACE OF *New York*

BY PAUL RUDOLPH, AIA

Chairman of the Department of Architecture at Yale

FAMILIAR LANDMARKS of great bulk disappear today in New York and are replaced by cellophane wrapped giants, but there is great apathy over the deposed and the character of that which replaces them. Interestingly enough only one journal runs regular critiques concerning this phenomena. The only thing that stays the same in New York is the streets, although the ratio of enclosed usable space to vehicular space was thought to be unbearable thirty years ago. The number of miles of elevators long ago overtook the miles of streets. This building orgy has produced more atrocities than any other period. Why?

Technically we can do almost anything, but this actually makes it more difficult since the choices are multiplied. There are at least four reasons why we are not improving the environment (except possibly for land-owners) which I shall outline.

First; the Ecole Des Beaux Arts principles and theories which dominated the nineteenth century proved inadequate for the twentieth. Modern architecture has produced brilliant theories for individual buildings but so far has thrown little light on how to relate one building to another or to the street or city. We build endless streets leading on, on, on, with advertisements shouting stop, stop, stop. We build incoherent assemblages of structure, each crying for as much attention as possible. For instance Park Avenue, north of Grand Central Station was a typical Ecole des Beaux Arts concept, *i.e.*, apartment houses more or less the same height and scale lined the grand avenue leading up to the great gateway. This was a simple scheme to which most architects of the day subscribed. The avenue was

rendered cohesive even though many contributed to the complex. Their aims and ideals were unified.

Today Park Avenue has exploded. By 1961 the area from Grand Central to the sixties will be almost completely rebuilt with billboard-like buildings, each shouting for as much attention as possible. The area will have two of the country's best (Seagram and Lever), and some of the worst. It is tragic that often the best is compromised by its neighbors. For example a plaza was proposed on the Park Avenue side of Seagram's northern neighbor, the Astor building. The two plazas would have cancelled each other for it would have become merely a widening of the avenue rather than a defined space for pedestrians only. Fortunately, economies dictated the elimination of Astor's plaza so that Seagram's plaza will have its desperately needed third side after all. One way towards a more comprehensive New York is for each building at least to respect its neighbor.

Secondly, if we are to avoid building atrocities we must reevaluate our hierarchy of building types and suitable techniques of expression for them. Traditionally the gateway to the city, the place of worship, the governmental buildings, the palace, the institutional building, and the meeting places of the people became focal points. These buildings were given status by their prominent siting, by the ample space left in front of the building to allow comprehensive viewing, by the manipulation of the angle of vision, by the abundant play of light and shadow, by their dominant silhouette, by the stepping up of scale, and by sculpture, painting, fountains and landscaping. These focal points were carefully juxtaposed.

posed to much quieter building types such as housing, office buildings, shops, all of which were usually restrained in design, and certainly did not dare to assert themselves in the presence of the important symbols of the culture. This careful hierarchy was bound into a whole by plazas, courts, loggias, places, arcades, promenades, and grand stairways for the pedestrian only.

Today there is no hierarchy of building types. Hot dog stands assimilate opera houses, institutions look like factories, apartment houses look like office buildings, churches like over-sized cottages, office buildings are packages of air conditioning and other mechanical marvels (whatever space is left over is used by humans).

The appropriateness of this or that technique tends to elude us. The revenue laden multi-storied office building dominates the cityscape by size alone. The post World War II decades may eventually be called by architectural historians "The Rise and Fall of the Curtain Wall." The alignment of curtain-walled buildings alongside our endless streets suggests large rolls of wallpaper pasted on. Sometimes the wallpaper appears as if it were about to crumple and fall. The window wall manufacturers are jumping. Driving around New York is rather like flipping through the pages of the window manufacturers' catalogues, except it is interrupted by the stamped metal stampede. Certainly an all glass building can be beautifully handled and can be defended technically. However, the important thing about these taut glass sheathed glass buildings is their reflective quality. Lever House would not be half as effective if it did not have the Racquet Club and plenty of clouds and sky for its reflections. But glass buildings reflecting each other is a very different matter. (One wonders what it will be like when four all glass buildings at an intersection will be completed.) We may be building overgrown mirrored barber shops. So far the grill gripe hasn't hit the city. The reduction of everything to a rectangle is an outgrowth of the modular concept and the machine process, but one inevitably longs for buildings conceived in terms of light and shadow as well as for their reflective quality. Furthermore these office blocks seldom respect the age old principle that the design of an element close at hand varies from that at a distance. We are more concerned with the first three or four floors than the upper ones, yet few of our buildings take this into consideration.

Thirdly, if New York is to become physically more dynamic it will learn anew how to protect its unique spaces and to dispose its new buildings to create different kinds of space. The quiet, enclosed, isolated, shaded space, such as the Cloisters;

the hustling, bustling space, pungent with vitality such as Times Square (it is best at night because the architecture has disappeared and crude, bold, unsubtle, but dynamic artificial light is in command giving us a touch of the future); the paved, dignified, vast, sumptuous, even awe-inspiring space, such as the Western approach to Columbia University; the mysterious space that one finds in the Wall Street area, under bridges, and in Greenwich Village; the transition space which defines, separates, and yet joins juxtaposed spaces of varying character such as the plaza in front of the Plaza Hotel. We need sequences of space which arouse one's curiosity, give a sense of anticipation, which beckon and impel us to rush forward and find that releasing space which dominates, which climaxes and acts as a magnet and gives direction. This is well illustrated by the Fifth Avenue entrance to Rockefeller Plaza, where one strides forward in anticipation of seeing the sunken court and its activities. Most important of all we need those outer spaces which encourage social contact, again well illustrated by Rockefeller Plaza, the best outdoor living room in America.

Finally, if we are to do justice to New York, we must make use of the most talented architects rather than the handful who are re-building New York and can be counted on to "play the game." Building has become so complicated and expenditures so great that an owner is most interested in the architect as a businessman, administrator, and technician. The owner *merely hopes* his architect is also an artist. The architects have contributed to this sad state of affairs by apologizing for any visual and spatial concerns, and calling themselves everything except artists. The architect has lost status and often is not given sufficient time for study of a proposed project. Once the owner has decided to build he is anxious to have the highest income from the new building and to minimize the total lack of return during the demolition and construction period. This haste is reflected in the quality of the architect's work, for he no longer feels that he is "building for the ages." It is entirely possible for an architect to see his sketches and models take physical form, be used, major remodeling undertaken, the edifice demolished, and another building arise within his professional life span. However, this is insufficient reason for the present apathy.

The public has shown that it appreciates that which is really good, such as Rockefeller Plaza, Seagram, Lever House, and the Manufacturers Trust. One remembers that Venice was created by a great commercially minded society, but beauty was important to them. A society gets only that which it demands.

Space Analysis in Architecture

NATHANIEL BECKER

The author is a partner in Becker and Becker Associates of New York, pioneer consultants in the field of space analysis. In this article he tells how and why the space analysis approach to program research is being found increasingly useful to the architect.

SPACE ANALYSIS, or the programming of the human use of space, may be described as pre-architectural planning as practiced by an objective, disinterested third party. In more specific terms, it is a logical and orderly system of investigation into the requirements of space in a given or proposed structure. Its aim is to determine how much space is needed, by whom, in what capacity, how often, what size, what kind, where and why.

This investigation subsumes a thorough understanding of architectural problems as affecting the final building solution, but it does not presume to usurp, not even in part, the central and irreplaceable role of the architect as *primum mobile*, or creator. The consultant space expert is an informed, analytical researchist, and it is his principal function, with his knowledge of design possibilities and limitations, to bring to bear a sum of experience in advanced researching techniques that relate to the human occupancy of space. He evaluates all pertinent facts and figures as to their relevant worth, collates them into precise needs, and integrates them into a firm, coherent, and meaningful program with an incontrovertible basis in fact.

Every architect knows how difficult and time-

consuming it is to elicit competent, reliable information from his well-intentioned client. It sometimes happens that the information so obtained is not altogether founded on salient consideration but—all too understandably—on wishes; or it is perhaps distorted by momentary personal caprices which fluctuate and change in the course of programming—to go no later than that phase of the project. Every architect knows that polling his client and his executive personnel is that much time and arduous work added to his total project, when normally he should be free to concern himself with more purely architectural considerations. He also knows the difficulties involved in compiling and submitting for his client's signature all pertinent information regarding spatial requirements, and the problem of doing so in a sufficiently controlled way as to resolve all questions clearly and as nearly irrevocably as possible at the outset.

And concomitantly with this, every architect is familiar with the most annoying problem of all: giving his client what he wants when sometimes the client himself is not at all sure what he wants.

Are there ways—definitive, thorough, and accurate—of determining a foundation on which to

build with confidence; not limit or harmfully restrict the client's operation; and architecturally exploit to the fullest the functional and formal possibilities of a contemplated building? There of course are, and space analysis is pre-eminently one of those ways.

However, before going into an examination of how space analysis is performed in aid of the architect and client alike, it might not be amiss to make a distinction between it and what is still occasionally confused with it—interior design. The two can in no way be construed as identical. The latter, it goes without saying, has its legitimate place, but it is an animal of another stripe. As commonly practiced, interior design presupposes an existing architectural concept, and adapts itself to its interior incidents. It is architecturally a *post-facto* effort, beginning with committed space and making design use of it. Space analysis, on the other hand, concerns itself with the exigent requirements of space as ascertained by inquiry into existing functions, an inquiry that gathers precisely tabulated statistics from which can emerge tenable design possibilities. Space analysis is a necessary *tool*: It is a "bottom" on which to conceive a design.

Although program research is and has always been the proper responsibility of the architect, the aid of the specialist, in the form of space analysis, has come to be of invaluable service to him in a multitude of ways which can perhaps best be set forth in description of a specific work of analytical programming.

The city of Philadelphia retained Vincent G. Kling to prepare a design for a Municipal Services Building, a structure intended to house a staggering complex of city functions and bodies. In his approach to the problem, Kling engaged as consultants our firm, Becker and Becker Associates. The aim of the assignment was to compile for him the necessary data to program his then undesigned building. Facing our staff was a truly formidable list of elements which would, individually and collectively, affect his final design solution, and all of them had to be considered. There was, for example, the matter of present needs and personnel, and the needs and increases that would come with inevitable later expansion. There was the plotting and charting of the transient and permanent population of the building, and the traffic flow of both. There was the incidence, size, and duration of conferences and meetings; inter-office traffic among executives and other personnel; the use, need for, and location of centralized services, such as reproduction, libraries, supplies, micro-filming, food service, and parking facilities; an accounting of special equipment require-

ments, such as for computers and business machines, files, and individual library units; a consideration of all special equipment that would require particular treatment, as, for example, those pertaining to acoustics, fumes exhaust, and unusual floor loading; a determination of the exact size, number, and purpose of offices of all types, as well as those for the more than usual conditions of prestige and privacy; a working ratio between private and non-private space; suggestion as to bay—and mullion—spacing from an *economic* point of view; and, a recommendation for the average and extreme dimensions of the various organizational units to be housed as a basis for module and bay design.

THE MAGNITUDE of this preliminary aspect of the project can be appreciated when it is considered that some department heads direct operations with staffs as large as a medium-sized corporation; that the Department of Collections uses 25 million IBM cards per year; that the mail-handling activities are equivalent to that of a large city post office; that the influx of the general public to certain departments reaches a total of 7,350 persons in a single day, and that the Personnel Department gives written tests to 35,000 persons every year, and last year alone fingerprinted over 15,000 persons. Add to this the anticipation of subtle changes in balance between given elements of the total operation (most functions do not develop at the same rate nor at the same time) and an idea can be gained of the intricate ramifications of the work.

But, as though this were not enough, the number of inhabitants and visitors to a building, and the furniture and equipment space needed for them, seemed almost a minor consideration compared with still other elements of pre-planning. For what had also to be determined was the working shape of the organizational body, a shape based on the interrelationship of individual functions, or adjacencies. This study, characterized by its exactness, was what would provide the disposition of all internal spaces; and these spaces in turn would suggest the most satisfactory allocation of net floor space, with minimum functional splits, in order to fulfil the client's requirements with optimum efficiency. And, finally, to top it all off, Kling had a stringent deadline to meet: He requested that we give him information as soon as collected and evaluated. Accordingly—although this is highly exceptional—we began an initial feedback of our earliest preliminary findings at the end of the third week.

The method of obtaining the data of the total



SCHEMATICALLY, SPACE ALLOCATIONS ARE SHOWN IN THIS ADJACENCY SOLUTION, WHICH ASSUMES AN OPTIMUM NET FLOOR AREA. DEPARTMENTS WHOSE FUNCTIONS DEMAND THAT THEY BE CLOSE TO ONE ANOTHER ARE SO DISPOSED. THE PUBLIC AREAS, WHERE TRAFFIC IS HEAVY, ARE NEAR THE GROUND LEVEL WITH GREATER NET SQUARE FOOT FLOOR. THE ARCHITECT'S DESIGN SOLUTION AVAILS ITSELF OF THIS SUGGESTIVE STUDY OF BROAD BASE AND TOWER.

program was orderly, thoughtful and meticulous. The first step, as might be expected, was to hold meetings both with Kling and his staff on the one hand, and with the Managing Director of Philadelphia and his staff on the other. The purpose of these meetings was to formulate the common general policies that would govern the objectives of the study. Following this, the space consultants prepared and distributed questionnaires to all groups scheduled

to occupy the new building. City officials and department heads filled them out and the answers were then examined in detail by project analysts who went out into the field—analysts trained and skilled in space planning, design, marketing, and business administration, and all of them having a thorough understanding of architectural problems. The questionnaires covered all ground, from personnel strength, expansion, private and general office re-

quirements, to auxiliary areas, public traffic, and adjacencies. An inspection tour was made, and space occupancy standards were established. Optimum space allocations of special areas not covered by these standards were determined by individual studies. When the space required for each group was analytically arrived at, trial layouts tested the validity of the standards employed. All data was then evaluated in order to suggest an idealized theoretical building mass.

But there was a departure from architectural custom in the manner of treating the questionnaires. As in all inquiries of this nature, many problems arise, and one of the questions that have always to be asked is: Can one safely take the word of a department head as to what he and those below him need? A department head, acting responsibly and in good faith, but being perhaps prejudiced in favor of one department to the detriment of another, and equally important one, may suggest too high a figure.

Or he may, with exaggerated caution, underestimate a department's present and future needs and cite an unrealistically low figure. To circumvent these contingencies, one of the special techniques used to avoid statistical pitfalls in poll-taking was this: An executive was not asked *if* he needed a conference room (he might have said he needed anywhere from none to two), but was asked instead: How often did he have conferences? And if he did, with whom? With how many others? How often did they occur per week, month, or year? Answers to questions of this kind supplied the analysts with logical, hard-fact bases for allocating proper conference space, and, in a similar manner, all space.

In this method of study, it was patently necessary to have a checks-and-balance system. The consulting space analysts, through their practice in investigating functions and responsibilities, were able to arrive at their own and necessarily impartial figures against which the expressed desires of each

THESE TYPICAL FORMS, SOME USED IN INTERVIEWING KEY PERSONNEL AND SOME IN TABULATING AND RECORDING DATA IN A SPACE ANALYSIS PROGRAM, ARE THE TOOLS OF THE FACT-FINDING TECHNIQUE. THE CODED STATISTICS THUS ACCUMULATED ARE COLLATED IN ORDER TO DETERMINE EXACT SPACE REQUIREMENTS FOR INDIVIDUAL FUNCTIONS, AND THEN INTEGRATED MEANINGFULLY TO SUGGEST OPTIMUM NET FLOOR SPACE ALLOCATION FOR THOSE FUNCTIONS.

ARCHITECT'S CHECK LIST

BECKER AND BECKER ASSOCIATES

ITEM

1. Elimination or change of type

2. Addition or change of location

3. Change the supervisor

4. Folding down the partitions

5. Pickers

6. Water supply

7. Sewer or waste pipe

8. Gas

9. Compressed air

10. Electricity (other than 110V)

11. Special ventilation or air

12. Pneumatic tube

13. Intercom

14. TV or radio antenna

15. Special lighting

MECHANICAL SERVICES

ITEM

1. Coat racks

2. Coat hooks

3. Shelves

4. Coat racks

5. Pin up boards

6. Blackboards and etc.

7. Mirrors

8. Directories

9. Wall display cases

10. Projection screens

11. Picture moldings

12. Clocks

13. Counters

14. Special cabinet work

15. Locks

16. Partitions

17. Ventilated lockers

18. Light proof device

WALL MOUNTED AND BUILT IN EQUIPMENT

Interviewed by _____ Date _____

Checked by _____ Date _____

NO. SO. OA _____

BECKER AND BECKER ASSOCIATES

SPACE REQUIREMENT SUMMARY

BECKER AND BECKER ASSOCIATES

Survey Guide Summary

BECKER AND BECKER ASSOCIATES

Q-1A Present Space _____

Q-2 1958 Personnel: Men _____ Women _____ Total _____

Q-3 Modular Equipment _____

Q-4 200 visitors _____

Q-5 _____

Q-6 Record Protection Need _____

Q-7 Type Vault _____

Q-8 Present Filing Satisfaction _____

Q-9 Conference: 1958 _____ 1965 _____

Meetings _____

Q-10 Central: 1958 _____ 1965 _____

Q-11 Outside Visitors: 1958 _____ 1965 _____

Average _____

Q-12 _____

Q-13 _____

Q-14 _____

Q-15 _____

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FAVORITE FEATURES



- 1-2 Women's Dormitories
- 3 Episcopal Center
- 4-6 Men's Dormitories
- 7 Methodist Center
- 8 Baptist Center
- 9 Presbyterian Center

- 10 Newman Club
- 11 Bible Chair (Church of Christ)
- 12 Chapel
- 13 Administration Building
- 14 Liberal Arts Building
- 15 Engineering Building
- 16 Home Economics Building
- 17 Industrial and Civil Engineering
- 18-19 Maintenance Building and Addition
- 20 Home Management Building
- 21 Building Supt's. Home
- 22 President's Home
- 23 Health Center
- 24-25 Dining Hall and Addition
- 26-27 Classroom Buildings
- 28 Student Organization Building
- 29 Student Union Building
- 30 Book Store
- 31 Library
- 32 Science Building
- 33 Biology-Geology Building
- 34 Business Building
- 35 Music Building
- 36 Theater and Gallery
- 37 Speech and Drama Building
- 38 Art Building
- 39 Green House
- 40-44 Classroom Buildings
- 45 Auditorium
- 46 Gymnasium and Addition
- 47 Women's Gymnasium
- 48 Swimming Pool and Bath House
- 49-51 Married Couples Housing
- 52-53 Men's Dormitories

- 54 Vocations Administration Building
- 55-56 Vocations Shop Buildings
- 57 North Dining Hall
- 58 Men's Dormitory
- 59 Carillon Tower

LAMAR LIBRARY ADDITION

BM Photographs



OF RECENTLY ELECTED FELLOWS

LLEWELLYN W. PITTS, FAIA

Pitts, Mebane & Phelps, *Architects and Engineers*

LAMAR STATE COLLEGE OF TECHNOLOGY, BEAUMONT, TEXAS

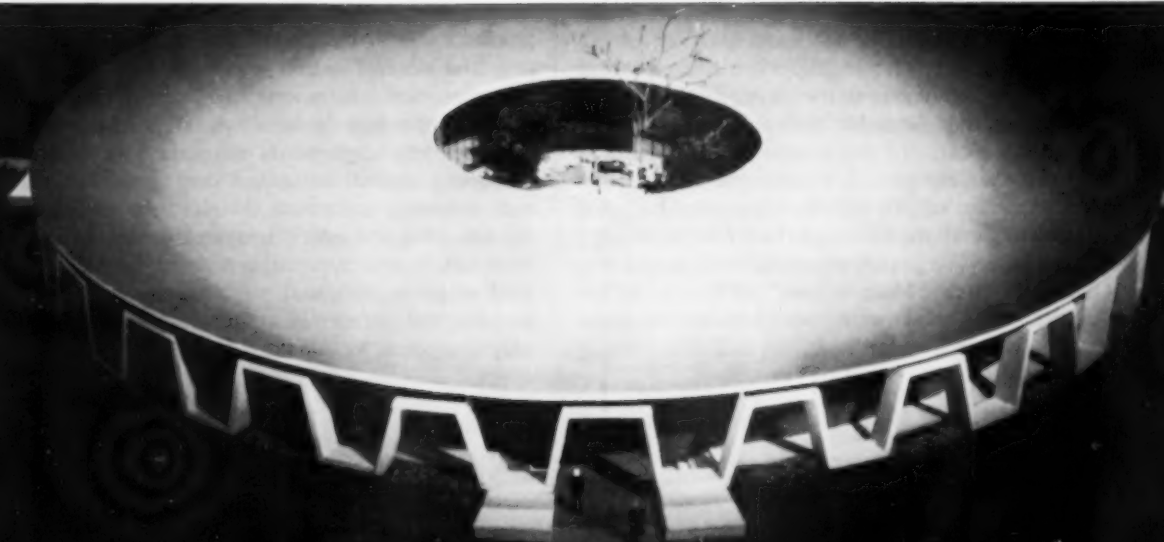


LIBRARY ADDITION INTERIOR



COMBS HALL DORMITORY

MODEL OF PROPOSED ADMINISTRATION BUILDING



department head were checked. The analysts' figures, informed by the overall study of the project and advised by their observations in the field, were based on the client's past requirements, present necessities, and by controlled projection, future needs.

As important a consideration as any was that the occupants of a building not be thought of as just employees but also as human beings. Hence their participation in interviews. Also, care was taken in analysis to preclude any fundamental change in their work habits and patterns, thus averting any adverse affect on morale.

As each department's requirements were compiled in cogent detail, an outline of them was submitted for approval and signature. In that way, each step, each piece of the growing pre-architectural program was clearly set forth in concise prose, clear charts, and easy-to-read graphs (always more comprehensible to a client than architectural plans). It was gradually stripped of all possibility of guess and error, and, by the affixing of each signature, was made firm.

In all this, the obvious benefit to the architect was the certainty that his building design was within sound functional limits, thereby satisfying his client as to his wants and needs; and, to the client, the certainty that he was getting the best possible use of affordable space, *mutatis mutandis*, that could be provided him, thereby inducing his trust in the design solution.

One aspect of this kind of project, worth noting in passing, is to see that combinable services are not separately repeated. We all know or have heard of duplicate facilities in city and county buildings where those buildings are in close proximity to each other. Very often this duplication is due to antiquated and sub-standard—therefore inefficient—quarters, and neither the local nor the county government alone can afford better facilities, whereas together, if jurisdiction allows, they could. One of the purposes of the analyst's survey is to undertake the chore—understandably distasteful and time-consuming to the architect—of demonstrating, wherever possible, that the services and functions of two or more departments or buildings could be combined at a measurable saving to the client, a saving which invariably lends favorable financial support to the architect's plans. In our experience it was true of one project. For example, analysis proved that combined facilities saved a sufficient amount of budgeted money to permit the building to be a few (necessary) stories taller—an apparently paradoxical demonstration in costs that More is Less. (There is, by the way, no set pattern as to who initiates the transaction. In our experience the architect usually

negotiates the consultant as an "extra," charging him to the client at cost. However, it frequently happens that the client himself retains the services of the consultant, and it is he who pays the fee directly. In either case, the service invariably results in real savings to both.)

All of these problems, and others, arose in our Indianapolis-Marion Building Authority project, a joint city-county building, on which we worked with Allied Architects of Indiana, Inc. The project here was similar in scope and size to the one in Philadelphia, with the difference that some initial research had been done. But it was apparent that the nature of this prior research, while sound as far as it went, was more quantitative than qualitative, so that the basic requirements had yet to be thoroughly, and consequently *usefully*, outlined to aid Allied Architects. Executive and department heads had been asked what they thought their requirements were, but, like most laymen, they are not skilled in judging space, whether they happen to be sitting in the middle of it or require it additionally, just as they are not likely to be skilled in deciding whether it would be more economical to rehabilitate their existing building or commission a new one to be constructed. It is normally not their function to be expert in such things. When occupancy standards were set up for them, the Building Authority was given incontestable proof of efficiency. The savings in cost, based on comparative, documented information, satisfied the Authority to the extent of awarding Becker and Becker Associates a second assignment, that of preparing specifications for furniture and equipment to be procured on an open-bid basis.

These surveys and reports of outside experts are of aid to architects and clients in another way: On the architect's side, they support and bolster his design recommendations economically and statistically—as much after the building has been up and lived in as during the drafting phase; and on the client's side, they provide the corporate body a documented record, a proof of real needs that can be pointed to, justifying its decision in expenditure.

The work of space analysis is of course by no means restricted to government buildings, nor certainly to one type of building. It is most ideally suited to any single-tenant structure with multiple functions: institutions, major corporate headquarters, insurance companies, hotels, universities, and the like. But to a great extent, multiple-tenant buildings, too, benefit appreciably by a program of this kind of pre-architectural planning; as can, in fact, business and commercial buildings in general. The only exceptions to this seem to be those structures

with undifferentiated space—and even then, only if the space *remains* undifferentiated.

It is all too well known that building projects of great size present the architect with a programming job of migraine complexity and time-frittering pursuit of detail. Accordingly, except for the rare firm with mammoth staff, the architect who in the past has had to engage heating, electrical, analytical, and structural engineers and consultants and analysts is now finding it useful and profitable to engage the services of another and newer specialist—the space analyst. The trend appears to be to welcome him as an increasingly indispensable liaison between client and architect, as well as a work arm. And it is not surprising: A list of some of the advantages to both, as demonstrated through experience, show clearly why. The space analyst:

- Eliminates interminable interviews and meetings, for top management both on the client's and the architect's side, in an attempt to fix requirements, while avoiding the hazard of accepting data at face value
- Eliminates the risk of eating up an undue portion of the architect's fee in the programming phase due, as sometimes happens, to miscalculation in estimating necessary time
- Eliminates costly and annoying mid-stream changes in programming by establishing a thoroughly documented, signed, and approved report that stands as a record to protect both parties
- Eliminates later interior changes (sometimes annual ones) and additions, which are embarrassingly expensive to the client and ultimately destructive to the architect's design
- Eliminates the nuisance of staffing-up the architect's office with extra, short-time personnel, or deploying existing staff to non-architectural functions, such as recording data, interviewing, and so on—duties for which the staff is not fully qualified nor its time in man-day rates justified
- Eliminates any suspicion of the architect as being self-serving by the existence of an impartial third-party survey and recommendation
- Eliminates a kind of Parkinson's Law from architecture—analyzing space needs only as time and patience allow, needs which although they do not exactly fulfill the client's requirements are relatively easy for him to adjust to once he has moved in.

It is hoped that this brief description of an analytical programming work demonstrates the advantageous use of space analyst—that in serving the architect he performs in a way which is beneficial to the latter, and, at the same time, completely satisfies the requirements of the client. This kind of cooperative enterprise, of mutually consulting one another from the inception of a project, has an additional important advantage: It affords the architect the freedom to start at the beginning of a design program rather than at the choresome and, to him, laborious drudgery of the pre-beginning.

The Fontainebleau School

THE FONTAINEBLEAU SCHOOL of Music and Fine Arts is a non-profit institution under the patronage of the French government. Courses are given for advanced students of music and the fine arts during the summer months, from July 1 through September 1. The school is located in the Palace of Fontainebleau, near Paris.

Many American architects have participated in the architectural curriculum at Fontainebleau since its establishment in 1922 and have found it to be most worthwhile. A number of distinguished practitioners list Fontainebleau in their *Who's Who* data.

The curriculum is directed towards a study of the present enabling the students to study modern French architecture and city planning, and to meet creative leaders; design projects with studio criticism by French practicing architects and city planners.

A survey of the past designed to acquaint the

students with the finest masterpieces of French architecture through visits and trips accompanied by a lecturer. Pierre Devinoy, Director, describes the program as aiming "toward a confronting of technician's views around the projects, giving the students the opportunity of reconsidering general problems and of comparing ideas with their French and American colleagues. This leads to making their trip to Europe a most profitable one, besides the usual visits to monuments and sites."

The tuition fee for the program is payable in advance to the New York office. The charge covers class and private lessons, practice instruments in the Music School, models in the Art School, and concerts, lectures, room and board.

In the past the Fontainebleau School has offered a "Package Deal" including tuition, room and board, and the round trip plane flight. For further information write to: American Office, Fontainebleau Schools, 122 East 58th Street, New York 22, N. Y.

SHARP FOCUS

TWO MEMBERS of the Institute occupy especially advantageous observation posts; Professor Emeritus Walter C. Voss of M.I.T. and William H. Scheick, Executive Director of the Building Research Advisory Board and the Building Research Institute. At the conclusion of one of the excellent research correlation conferences conducted by Scheick, this one on Adhesives and Sealants in Building, December 1957,* Voss and Scheick made summary observations, parts of which were of broader significance than the subject of the conference.

Voss: "The conference dealt with only a small but important segment of the industry. There remains the exploration on a similar basis of other segments of the industry even including the broader effect which our activities have on the social, economic and regulatory aspects of our national life—we must cut down the evaluation time of new material and methods, heretofore taken for granted. Duplication of effort must gradually be eliminated—we must somehow create a means of cross-fertilization and dissemination.

"Do you suppose you would be willing to underwrite and adhere to concepts providing for the free flow of information and be willing to cooperate with others on a preplanned attack on fundamental problems—would you be willing to cooperate in an effort to analyze the why and how of failures to avoid the many repetitions of such failures by others? Would you be interested in knowing that an approach to a

problem which you propose had been found undesirable on several other occasions by others or do you think you can commit the 'ideal crime'?"

Scheick: "All parts of the industry are becoming aware of the *movement* of buildings and materials. I have heard Walter Voss explain this in such a way that you can just feel that building crawl. But it has not been adequately understood by generations of architects who design primarily for esthetics. The design professions still do not adequately recognize movements of buildings and material. The adhesives and sealants industry does seem to recognize this problem and is developing new materials to meet it.

"The design and construction industries are definitely looking for new and better and less expensive ways to put buildings together, with emphasis on bigger pieces, fewer parts and simpler assembly operation. As we see the components of buildings made more and more by manufacturing processes, and erection becomes more and more the assembly of big simple parts, I believe that building owners will expect higher and higher performance standards in their buildings. In a sense they will regard these buildings as manufactured products which should live up to the same kind of standards that we have become used to in America in other manufactured products."

*"Adhesives & Sealants in Building"
Publication 577—Building Research Institute
National Academy of Sciences, Washington 25, DC \$5

Position of State Architect Open

THE STATE OF WISCONSIN is seeking applicants for the position of State Architect. The duties of this office are briefly as follows: Organize and supervise state architectural services under the direction of the State Chief Engineer; direct the design of new state buildings, alterations and additions; serve as technical consultant to state departments and commissions; direct the work of Assistant State Architects and a professional and technical staff; direct the assignment of architectural work to private firms and review their work; supervise the preparation and interpretation of specifications; investigate sites and inspect work in progress; approve buildings before acceptance and final payment; serve as ex-

officio member of the State Building Commission and the Wisconsin Registration Board of Architects and Professional Engineers.

The position carries with it a permanent civil service status, group life insurance, social security and a good retirement program. The qualifications include a degree in architecture and six years of administrative experience in architecture, including responsibility for directing major architectural projects. It is open to non-residents, but Wisconsin registration prior to appointment is required.

Applications must be in by May first. For further information, write to Ralph D. Culbertson, State Chief Engineer, Capitol, Madison, Wisconsin.

Do You Know Your Documents?

For Instance: *The Legal Validity of Contracts*

WILLIAM STANLEY PARKER, FAIA, *Consultant to the Institute on Contract Procedure*

THE SIGNING of a Contract always creates a pleasant sensation but rude shocks later on sometimes develop when it is discovered that the Contract is invalid because one of the signers, perhaps, had no authority to sign it. When a private individual signs a contract, very likely in the presence of the Architect, there can be little doubt on that score, the only question being his financial ability to pay. When, however, the Owner is a corporation it is a different matter.

If a contract is signed by a person known to be the president or some other officer of a corporation it should be routine procedure to secure a copy of the minutes of action by the corporation authorizing him to sign the particular contract involved. Sometimes the Architect himself is a partnership, or even a corporation, although in most registration laws corporations are not permitted to act as Architects. However, if the corporation existed prior to the passage of the registration law, it may still be permitted to continue to practice. In such cases the Architect equally should provide the Owner with evidence of the Architect's authority to sign.

When the Architect is dealing with a public agency such as a school board or a city or town department, it is highly desirable for the Architect to make sure that the official with whom he deals has power to bind the agency. It is also well to be sure that an appropriation has been duly ordered to cover the operation, complying with all necessary ordinances and formalities; otherwise the Architect later may find his claims for compensation are unenforceable, however much work he may have done.

The matter gets still more complicated if execution of the work is based upon federal assistance. In one case a county failed to raise its share of the

cost and the federal grant was rescinded. In some cases the city may still be responsible for paying the Architect for the service actually rendered, on a *quantum meruit* basis, as the lawyer would say. In one case, however, the court held that the Architect had dealt with only a single member of a Board, at his own risk, and that only a majority vote of the Board could obligate the county. Certainly assurance of proper Board action should always be secured in dealing with such public agencies.

Even if an Architect is able, by court action, to secure payment for his services, the cost of such legal action will remove a considerable amount of his satisfaction in the final outcome. In some cases the fact that the low bid exceeds the Architect's estimate or the amount of the appropriation may be held to invalidate his claim for payment. In all such cases it is well to have clear evidence in the Agreement for his services that he in no way guaranteed the estimates. Where an appropriation is involved the Owner's requirements are an important factor in the amounts of the bids received from the Contractors. Often the public agency tends to increase its desires and its requirements. An Architect should keep a clear record of any such changes in requirements and confirm them to the agency. It will be well to have a clear provision in the Architect's agreement that, if the low bid exceeds any fixed outside cost or appropriation, the Owner shall either increase the cost limit or cooperate with the Architect in reducing the requirements.

Where evidence satisfactory to the court shows that there existed an agreement between Owner and the Architect that the cost of the work must not exceed a stated amount, court decisions have held that the Architect is not entitled to any fee.

THE QUESTION of an architect's liability under the Federal Wages and Hours Act to pay overtime was determined by the Supreme Court of the United States in the recent case of *James P. Mitchell, Secretary of Labor vs. Lublin, McGaughy & Associates, et al.*, decided January 12, 1959. The architectural firm lost on its contention that an architectural firm is not engaged "in commerce or in the production of goods for commerce."

As most architects know, their professional employees are specifically exempted from coverage under the provisions of the Federal Wages and Hours Act.

This is another of a long line of Supreme Court decisions which would seem to indicate that when in doubt about his obligation to pay overtime, an employer should do so, and I think we might also say that when in doubt about whether an employee of an architectural firm is a professional employee or a non-professional employee, the architectural firm would be more prudent to decide that the employee was a non-professional employee. This recent decision has prompted us to review a number of Supreme Court decisions over the years relating to the coverage of employees under the Federal Wages and Hours Act. Let us consider first of all those cases in which the employer lost, in other words, where the employee was held covered by the provisions of the Act.

In *U. S. vs. Darby*, 312 U. S. 100 (1941), the employer lost where it was found that even though none of his goods were sold directly by him outside of the state, nevertheless they were ultimately intended for interstate commerce.

In *Kirshbaum vs. Walling*, 316 U. S. 517 (1942), it was decided eight to one that service employees of a loft building for manufacturing were covered.

In *Missel vs. Overnight Motor Transportation Company*, 316 U. S. 572, (1942), it was found eight to one that a non-operating employee (rate clerk) of a motor carrier was covered.

In *Walton vs. Southern Package Co.*, 320 U. S. 540 (1944) it was

found that a night watchman of a company engaged in the production of goods for interstate commerce was covered.

In *Armour & Co. vs. Wantock*, 323 U. S. 126 (1944), it was found that fire-fighting employees of a meat packer were covered.

In *Borden Co. vs. Borella*, 325 U. S. 679 (1945), it was held in a seven to two decision that office building service employees were covered where the dairy products distributor occupied 58% of the office building it owned.

In *Roland Electric Co. vs. Walling*, 326 U. S. 657 (1946), it was held that an electrical contractor was covered even though he performed no service nor sold no goods outside of a single state, inasmuch as his customers were engaged in the production of goods for interstate commerce.

In *Martino vs. Michigan Window Cleaning Co.*, 327 U. S. 173 (1946), it was held that a window cleaning contractor was covered where the windows cleaned belonged to companies engaged in the production of goods for interstate commerce.

In *Mabee vs. White Plains Publishing Co.*, 327 U. S. 178 (1946), it was held that a newspaper publisher with only one-half of 1% of subscribers outside of a single state was engaged in the production of goods for interstate commerce. The decision was eight to one.

In *Powell vs. United States Cartridge Co.*, 339 U. S. 497 (1950), it was held five to two that the production of munitions came within the coverage of the Act.

In *Alstate Construction Co. vs. Durkin*, 345 U. S. 13 (1953), it was held seven to two that a highway contractor's off-the-road employees were covered despite a contrary administrative ruling in effect from 1938 to 1945, being the period

in controversy in this case.

In *Thomas vs. Hempt Bros.*, 345 U. S. 19 (1953), it was held seven to two that a stone quarry and ready-made concrete concern making no out-of-state deliveries was covered, since its products ended up in highways and buildings related to the production of goods for interstate commerce.

In *Mitchell vs. C. W. Vollmer & Co.*, 349 U. S. 427 (1955), it was held six to two that the repair of a canal lock in the intra-coastal waterway was covered.

It is to be noted that in these decisions against the employer, while there are some dissents, nevertheless none of the decisions are close.

Let us look now at the decisions in which the employer won, that is, in which it was held the employment was not covered by the Federal Wages and Hours Act.

In *Higgins vs. Carr Bros. Co.*, 318 U. S. 573 (1943) and *Walling vs. Jacksonville Paper Company*, 318 U. S. 564 (1943), it was held that a wholesaler of consumer goods not making shipments outside of a single state, was not covered.

In *McLeod vs. Thielkeld*, 319 U. S. 491 (1943), it was held that the cook for a road gang of a railroad was not covered in a five to four decision. It would be my opinion that the ruling would be different today if it were a new case being presented to Court.

In *Western Union Telegraph Company vs. Lenroot*, 323 U. S. 490 (1944), which dealt with child labor, where the statute is slightly different from that in respect to overtime, it was held in a five to four decision that while telegraph messages are goods in interstate commerce, the Western Union Telegraph Company is not a producer of them nor does it ship them in interstate commerce. We also believe that

ANDREW W. GREEN

When In Doubt, Pay Overtime

were this case being heard today for the first time, the decision would be contrary.

In *10 East 40th Street Building vs. Callus*, 325 U. S. 578, (1945), it was held in a five to four decision that a downtown office building with many miscellaneous tenants was not covered. Likewise, we think that were this case being heard today for the first time, it is likely that the decision would be reversed.

In *Boutell vs. Walling*, 327 U. S. 463 (1946), it was held that employees of a subsidiary company to maintain motor vehicles of an interstate motor carrier were covered. The vote was six to three, but the dissent was on the grounds that the employees were regulated by the Interstate Commerce Commission and not that the repair of motor vehicles was not related to the production of goods for commerce.

In *Walling vs. General Industries Company*, 330 U. S. 545 (1947), it was held that operating engineers were exempt as "executive" under the provisions of the Act. It was a six to three decision.

In *Morris vs. McComb*, 332 U. S. 422 (1947), in a 5 to 4 decision, it was held that a motor carrier only 3% of whose traffic was interstate, nevertheless came under the jurisdiction of the Interstate Commerce Commission and was thus exempt from the provisions of the Federal Wages and Hours Act with respect to its operating employees.

In *Maneja vs. Waialver Agricultural Company*, 349 U. S. 254 (1955), it was held that railroad workers of a sugar cane plantation were exempt as agricultural employees under special provisions of the Act.

In a review of these cases, therefore, it will be seen that the employer has lost most of the cases and that in those cases which the employer won, many of them were by five to four

decisions, so that we have reason to believe that if the same issue were presented for the first time before the Supreme Court, it is possible that they would be decided the other way. A review of this litigation therefore leads us to the conclusion that where there is any doubt about the coverage of the employees by the Federal Wages and Hours Act, the prudent architect will pay overtime because his chances of winning if the matter is litigated are slight.

I think we ought to also mention in this regard the fact that a favorable ruling by the Federal Wages and Hours administrator will give the architect little or no protection in the event the matter is litigated. For example, note the case of *Alstate Construction Co. vs. Durkin* above. In this respect we think it is likely that the current administrative ruling that the construction of new buildings is not covered by the Federal Wages and Hours Act will be overruled when the issue is finally presented to the Supreme Court. The Supreme Court intimated as much in its decision in the *Lubin, McGaughy & Associates* case, when it said the following:

"Whatever vitality the 'new construction' doctrine retains after *Mitchell vs. Vollmer & Co.*, supra, and *Southern Pacific Co. vs. Gileo*, 351 U. S. 493, 500, it is not applicable here because, as the record shows, many projects involved the repair, extension, or relocation of existing facilities."

In view of this statement I would not want to proceed under the theory that new construction did not come under the coverage of the Federal Wages and Hours Act because I would regard this sentence as a warning that when the issue is presented directly to the Supreme Court, it will find that new construction is covered by the provisions of the Federal Wages and Hours Act.

Now, in forecasting or attempting to forecast the decisions of the United States Supreme Court, political factors are often helpful, although one has to be careful not to read too much into the political implications of Court decisions. It is significant that in the *Lublin-McGaughy* case, the two dissenting Justices were Mr. Justice Whittaker and Mr. Justice Stewart, the two most recent appointees on the Court and generally referred to as "Taft Republicans" as opposed to the "Modern Republican" appointees and "New Deal Democratic" appointees previously made. If one could forecast that the next three appointees of the Supreme Court were lucky to be Taft Republicans and that neither Mr. Justice Whittaker or Mr. Justice Stewart would leave the bench of the Supreme Court, I might be inclined to reverse this forecast as to the possible trend of opinions by the Supreme Court relating to the interpretation of the Federal Wages and Hours Act. But since this eventually would be very unlikely, it would seem very foolish for practical men to govern their affairs on such an improbable occurrence.

Attorney Green of Harrisburg, Pa., is not only the son of M. Edwin Green, FAIA, but has had long experience with the law as it affects architects and is the author of a report to the Legal Committee of the Pennsylvania Society of Architects on the registration of architects and engineers.



Donald J. Stewart,

Director from the Northwest District

By ELIZABETH R. STEWART



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ARCHITECTS

APRIL 1959



*Second in a series
of articles by or about the
officers of the Institute.*

SON AND GRANDSON of covered wagon people, Donald J. Stewart is just completing his three years as Regional Director from the "great Northwest."

He went through grammar and high school in Spokane, Washington, and earned his B.A. at Washington State College, educational center for the Palouse wheat country where his grandfather homesteaded and his father ran a grain elevator at the time he courted and married Annie Jackson. Professor Rudolph Weaver, who later became head of the School of Architecture at the University of Florida, was his dean.

Fifteen months in Europe was the prescription given Don by his first employer, A. E. Doyle of Portland, Oregon, which started in Greece where Don and his wife Betty spent six months.

Don had the good fortune to find work there with W. Stuart Thompson, whose New York office had designed the Gennadius Library in Athens; Mr. Thompson was supervising its construction. At Mr. Thompson's suggestion Don worked four days a

week and spent week-ends on the Peloponnesus, at Delphi, Olympus and in Turkey.

Six months in Rome followed while the Stewarts awaited word to return to Greece for another job. This did not materialize but with permission to study at the American Academy and with time for short expeditions throughout Italy, the six months in Rome made Stewart history.

The three following years in New York were with Thompson and Churchill and with Benjamin Wister Morris. A premonition of the approaching depression brought the Stewarts back west with their yearling, Zach. Seattle and John Graham's office felt the first impact so the Stewarts migrated to Yakima where Don spent one year with John W. Maloney; then back to Seattle to weather out the rest of the blow with a wonderful acre of chickens, vegetables and flowers. A middle-of-the-night phone call brought Don to Vancouver, Washington, where a former associate in Doyle's office had snared a high school auditorium and all he needed was an associate with a Washington license. With only one other architect in the town and many old frame buildings crying for replacement, Donald J. Stewart, Architect, in due time became Donald J. Stewart, A.I.A.—a proud day.

A new courthouse for Skamania County, with high chaste windows framing the Columbia River and Mount Hood, was his thesis for a professional degree in engineering at Don's alma mater in 1952.

Six years ago a new name was added and the firm of Stewart and Richardson, consisting of Donald J. Stewart of Vancouver, Washington, and K. E. Richardson of Portland, Oregon, sent out announcements of their new location at 219 S. W. Stark Street in Portland.

The First Methodist Church was the firm's first prideful job in Portland. The First Presbyterian Church in Vancouver made sensitive use of native fir. A great Celtic cross dominates the chancel and the natural finish of the wood gives a feeling that the great church evolved from the giant red-barked firs of the rain forests.

Hudson's Bay High School in Vancouver pioneered the use of aluminum, another Northwest product, with exterior walls panelled with aluminum frames, with glass or aluminum-insulation-transite sandwich panels. The gymnasium doubles as a sports arena for the community, seating five thousand people. Stewart and Richardson are just now designing their third community library for Portland, and currently doing a classroom building for Portland State College. They are also the architects for the Oregon Centennial Exposition and International Trade Fair which opens this coming summer.

From the Executive Director's Desk:



CONVENTIONS, HAVING BECOME a perennial feature of contemporary life—by no means peculiar to this country, naturally arouse the clinical interest of the Octagon. So four or five years ago as a matter of basic research Arthur Holmes sent a questionnaire to all those who had been registered at a then recent convention. The purpose of the questionnaire was to find out why people came to conventions, what they did when they got there, what they liked and what they disliked. The results of the survey were interesting and to me, at least, somewhat surprising. Fully eighty percent of those who replied happily confessed that the impelling attractions were the opportunity to see other architects, renew old friendships, enjoy the social events and to have as good a time as their pocketbooks (credit cards) and the resources of the convention city would permit. The secondary attraction was the program, its speakers, seminars and other edifying pursuits. The next in attraction were the products exhibits. This was gratifying to the exhibitors and to myself who had persuaded their admission some years ago. We learned that some people came only to see these exhibits. Last, by a long way in the order of attraction, were the business sessions.

Now to me all this is sort of surprising, being engaged daily with the serious business of the success of a profession. I would be inclined to list the social events and the fun-time at the bottom of the scale. Part of the Washington scene is an abundance of enforced gregariousness which, to one inclined to be anti-social, can become something of a chore. However, there are those who set great store by the conventions' social attractions and I have even heard that there are those who look forward to the annual banquet all year, an occasion at which their

wives launch the new frock and at which they may expand to their heart's content.

In talking to people in other walks of life, other professions, members of other societies, I have realized that architects are a people apart, and although we are distinct, sometimes violent, individualists, the social proclivities of the genus architect and his aspiration toward interest, when that interest can be entertaining, set him apart.

The other day in talking with my doctor about the discussions that have arisen in connection with our holding a convention in New Orleans, I learned that he had recently returned from a convention of medical people held in that city. Whether it was the AMA or a branch thereof I do not know. He was somewhat surprised that we had run into any question. He informed me that he was oblivious of any factors that might have disturbed the customary routine of medical conventions; that his convention sessions had been very well attended and that members of so-called minority groups were present and participating in the sessions. When I asked about social activities of his organization at their conventions, he looked at me in blank amazement and said, "What social events?" Apparently the doctors do not go in for them or, if so, he seemed to be totally unaware that they were taking place at his convention. His purpose of going to his convention, a purpose shared I imagine by the vast majority of his fellow members, is to improve himself as a practitioner; to learn the latest developments of interest to himself; to be educated, edified and stimulated. I gather he regarded his convention going as an investment in himself, in his future and in his career, therefore an expenditure to be charged against education. Now I have found that the atti-

tude of the good doctor is to be come upon in other professions.

I was very much interested in attending an annual convention of one of the major engineering societies to observe the intense concentration of their conventioners on seminars, technical talks and any other activity which was aimed at improving the practitioner. Business sessions for the engineers are reduced to a bare minimum as they consider that the transaction of business is something that can be taken care of by those interested and elected by the membership to engage in a concern which the majority find tedious. But the real purpose of a professional society is to afford its members the means and media for perfecting themselves, for learning more, and for keeping abreast of current thinking in technical and professional areas of interest.

Those at the Octagon who organize are intent upon designing the program and producing speakers who can make substantial contributions to the advancement of the profession. Social events are regarded officially at the Octagon as added attractions, but scarcely as the *raison d'être* of a convention. Host chapter events are looked upon as opportunities for members from the rest of the country to acquaint themselves with the convention city, to meet and know their hard-working and enthusiastic hosts, and to gain all there is to be gained from a visit, especially in 1959, to a city of unique and vital fascination.

The function of the host chapter is of the most important and delightful responsibility. This will be especially emphatic in New Orleans in June where those of you who have not been there will find there is much to see and a most hospitable and avid host chapter committee to help you see it. The attraction of that city is not only visual but gustatory as well. Also that city possesses that sometimes elusive quality—atmosphere, and so is envied by American cities. Atmosphere stands in constant danger of enforced disappearance, especially in these times of the unenlightened but opportunist fiats of Madison Avenue, rapid travel, of neon signs, of the gimmicks that are fast destroying what little is left of the decency of our time. (There are those who fear that our culture is one of gimmicks and chrome.) New Orleans has managed to stand off the trend

and capture a bit of atmosphere for your pleasure, your entertainment and your nostalgic recollection.

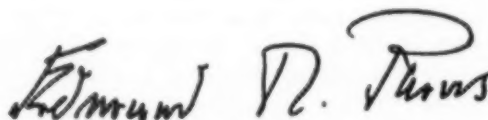
Our 1959 Convention will take on a somewhat different from the routine pattern. For years we have followed the same old formula, upset only by the Centennial Celebration. This was an all-out extravaganza—the like of which we will not see again within our time. It was a noble and brilliant experiment. Its impact still remains with us, for its effort was not only to impress and edify ourselves, but also to impress the public with the profession and to introduce us to many who had but fleeting knowledge of us before that glorious occasion.

In New Orleans we will concentrate on the theme of the Convention—“Design”—an all important word for architects, an all important word for everyone, when described as it will be described in its broadest sense.

An array of outstanding speakers is being assembled. There will be ample opportunity for you to enter into the discussions. There will be time devoted to the transaction of business (probably more than necessary), social events will not intrude. Such ceremonies of awards and investiture will be fittingly held during important sessions of the convention and not tagged onto luncheon or dinner to bore an audience that has been already beaten into stultification. We hope to eliminate the obligato of the drone of perfunctory speeches.

We think we may have come upon a formula which will stimulate and encourage us and which we hope will establish a precedent for conventions in the future, better geared to the objectives of the Institute. Also we appeal to the younger architects, to make this their occasion where they can listen, can expound and can explore along the lines of progressive perfection.

All in all we look to the 1959 Convention to establish a pattern which may set an inspiring model for conventions of the future dedicated to the development of architectural design and its impact on and relation to society.



Library Notes

National Library Week

AMONG THE PLETHORA of "weeks" which are noted throughout the year, it seems appropriate to notice here National Library Week, April 12 to 18, 1959. Inaugurated last year, National Library Week was widely observed and preliminary plans for this year indicate even more widespread interest.

What is the objective of the week? The slogan "Wake Up and Read" suggests it, and it is succinctly put in the words "for a better-read, better-informed America." Many of you may already have heard about this program for the National Education Association, the Junior Chamber of Commerce and the General Federation of Women's Clubs were active participants last year. Other cooperators this year are the Boys' Clubs of America, Kiwanis International, and the American Foundation for the Blind. Religious organizations taking an active part include the National Council of Churches of Christ, the National Catholic Welfare Conference and the Union of American Hebrew Congregations and Affiliates.

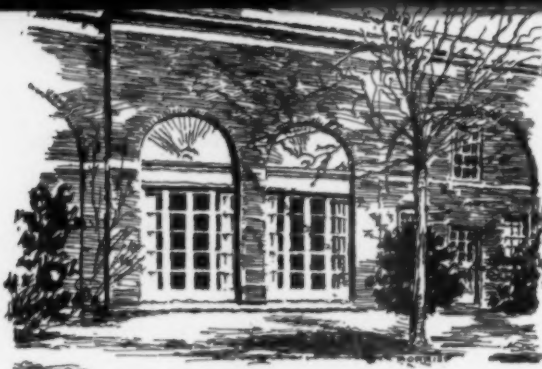
The number and variety of those organizations participating would seem indicative of the values placed on libraries as an essential in and to our American way of life. If there is a good public library in your community you will want to use it and support it. If there is not perhaps now is the time for you to join with your neighbors to insure the advantages of public library service to your city.

And do not forget your own AIA Library which serves not only the Headquarters staff, but which is also ready and desirous of serving you. Technical and professional books which may be outside the scope of all but the largest public libraries are available to members on the Library Loan Service.

Special Libraries Association

ONE OF THE MAJOR types of libraries in addition to public and college and university libraries are "special libraries." Your AIA library is an example of such a library. In July 1909 a group of special librarians joined together and organized the Special Libraries Association. Now more than 5000 strong, the Association has recently strengthened its professional status by adopting stricter membership requirements.

The Association publishes *Special Libraries* which the past few months has been carrying a series of articles on descriptions of new library quarters.



It has issued many books and pamphlets which are a constant source of help to the busy librarian.

In this 50th anniversary year the Librarian is pleased to give this small notice to one of his professional organizations. He also counts it a privilege, since having assumed his duties at the AIA here, to have served the local SLA Washington Chapter of some 500 members as secretary and as director.

Bookplates Again

MINDFUL OF THE library's interest in bookplates, Mrs. Rudolph Stanley-Brown has presented a copy of the recently issued *Yearbook 1957* of the American Society of Bookplate Collectors and Designers. The principal article is one on her husband, who was architect, designer and etcher. Mrs. Stanley-Brown records her husband's various artistic activities and has included useful lists of his etchings and of the buildings he designed while with the Public Buildings Administration. Copies of his bookplates are included with textual discussion of the significance of the design. In all a most welcome addition to the library's material on bookplates by architects.

Films

THE LIBRARY has had charge of the distribution of the various films produced under the auspices of the Public Relations Committee. A report of the circulation during the calendar year 1958 might be of interest.

	Loans	Sales
What is a House	69	33
A School for Johnny	65	39
A Place to Worship (2 months)	28	9
Architecture—U.S.A.	53	6
New Age of Architecture (4 months) (Architectural Forum, sponsor)	60	(Not handled by AIA)
	<hr/> 275	<hr/> 87

It should be emphasized that the number of loans does not reflect the actual number of showings, as in many cases there were more than one showing.

G. E. P.

BOOK REVIEWS

How to Estimate the Building Needs of a College or University. By William T. Middlebrook. 169 pp. 12 1/4" x 9 1/4". Plot plans. Minneapolis: 1958: The University of Minnesota Press. \$15.00

By Francis G. Cornell, Engelhardt, Engelhardt, Leggett and Cornell, Educational Consultants

There will inevitably be an accumulating technology on college and university campus planning as higher educational institutions gain experience in facing the practical economics of squaring rapidly increasing enrollments with slow conversion of increasing financial potential to actual usable revenue. Some of our better managed institutions have been in the habit of attempting to predetermine their facility requirements in amount and kind and in the process have developed devices to assist in this process. Minnesota is one such institution. It is fortunate that the approach developed by that institution has been reported in full for the benefit of the profession.

The ideal campus is theoretically one in which there is the right amount and right kind of space for each of the academic divisions (departments, schools, or colleges) and a proper allocation of space among various operational functions of a college such as instruction, research, public services, administration, plant operation, student services, institutional services, student living, food service, and merchandising activities.

A host of elements prevent the attainment of this goal. No perfect campus exists, in the sense of proper space allocation, and none ever will. Makeshifts and temporary substandard arrangements are to be expected, if for no other reason, because of the unpredictable changes which have come about and will continue to come about in the amount and kind of services any individual institution is expected to provide. Conceivably a small privately (and amply) endowed four-year liberal arts college can delimit itself not only in size, but also in clientele and curriculum in a manner which would

stabilize its space requirements over many years. Some institutions have in fact moved in this direction through dedication to a sociological sector of youth and adults, or devotion to types of academic standards which restrict student populations on the intellectual continuum, combined with some universal and eternally effective curriculum concept, great books or whatnot, which so simplifies the activities and the predetermination of activities that space requirements may be laid out with statistical precision.

But even in such a hypothetical situation, changes are necessary because of mechanical obsolescence—such needs as new electrical systems to handle new electrical appliances, improved heating, ventilating, illumination and the like. Hence, in varying degrees, all institutions need to apply systems which minimize the risk of failing to have suitable buildings at some future date. This is a matter of great importance because there are very few institutions without critical shortages of one or more types of space on the one hand, and at the same time excessively underutilized categories of space on the other.

The techniques of the Middlebrook publication follow a more or less standard pattern with useful refinements. In its simplest terms this basic pattern consists of

(1) A classification of spaces by function or different kinds of use, e.g., classrooms and laboratories by subject area vs. faculty offices, vs. student housing and feeding.

(2) A determination, for each space category, of a measure reasonably deemed to vary in proportion to space needed in such category, e.g., students enrolled, class sections, weekly student hours of instruction.

(3) A projection to some future date of various measures to be used.

(4) The determination of some space norm or factor by which to convert the respective measures into required spaces in each category.

(5) Projection of spaces needed using (3) and (4).

(6) Evaluating existing space and allocating same to categories in terms of optimum future use.

(7) Comparing requirements of (5) with available space of (6) to determine additional space required.

(8) Conversion of space needs into gross buildings requirements in suitable magnitudes, i.e., square feet or dollars.

Such a procedure is far more defensible, as Middlebrook points out, than the crude system of determining new capital requirements by the "increase-in-enrollment-times-so-many-square-feet" method.

The book shows what space allowances were made in Minnesota, but does not answer some questions about what utilization levels should be assumed and how much space required for each station for each purpose.

No statistical system will eliminate strategic judgment in effective planning. As a gross projection scheme the Minnesota project is not intended to help with such decisions as:

(a) Whether or not to put limits on the size of an institution by more selective admission or by restriction of functions.

(b) Whether or not to let nature take its course, so to speak, and follow the trend in enrollments by departments (business, agriculture, engineering, etc.) or to purposely reshape the relative training supply picture to fit changing regional and national labor market and manpower requirements.

(c) What may reasonably be expected in the way of utilization of space. (Many classrooms are used fewer than 10 hours per week. A good deal of soul searching is required to justify this.)

(d) The present and future educational usefulness of existing facilities.

(e) The most satisfactory method of organizing a campus, relating existing to additional facilities. (This may have important bearing upon how much additional space should be provided.)

THE EDITOR'S ASIDES

THE LAST TIME I drove past the East Front of the Capitol, the columns from the portico, about which such furor was raised last year, lay wearily on the ground. Since then I have seen a picture of them in the *Washington Post*, wrapped in laths and wire, ready to be stored away somewhere. Sad sight. These fine old monoliths deserve a better fate.

Horace Peaslee, FAIA, made the front page of the *Post* with his suggestion that they be used in a memorial of some sort, with a national competition for design. A wonderful idea—if only somebody would do something about it.

WE HAVE HAD many inquiries about the missing pages 11 and 12 in our February issue, so we might as well "issue a statement": At the very last minute, after the issue was printed and bound, we decided that the advertisement on page 11 might be construed to contain a violation of the Institute's code of ethics. So we notified our printer to stop everything and set up what must have been a unique procedure in his plant—the operation of tearing out, by hand, pages 11 and 12 from every one of 16,000 copies!

I MADE a quick trip to five cities back in January—Philadelphia, Pittsburgh, Cleveland, Toledo and Cincinnati, and took advantage of the opportunity to look at cityscape and "open spaces." (I've been reading Grady Clay!) Rittenhouse Square still has its nice intimate scale, greatly enhanced by the proper use of sculpture—small sculpture, and a fine sense of enclosure despite the massive buildings on the east side. Penn Center is rather formless, and it looks as though it's going to be filled up with buildings by the time they're finished—and the honky-tonk still standing on Market street is no asset. The new Mall north of Independence Hall is probably going to be wonderful, but right now it's just "open" and that's all—the side walls are ragged and full of gaps.

Mellon Square is a delightful thing to come upon after perambu-

lating around the narrow, congested and confined streets of Pittsburgh—too bad there aren't more of them. The Golden Triangle is very pleasing in certain areas where the relationships between its various buildings are already established and the landscaping completed. But as at Penn Center, I fear that too much of the present open area will ultimately be filled with tall buildings.

In my native Cleveland, the dear old Public Square is still standing, patiently waiting to have its face lifted. No, I don't mean to imply that the Soldiers' and Sailors' Monument must go. Even ugly landmarks come to be an expression of the *genus loci* and can become beloved. But a new traffic and landscape pattern would do wonders. Not many cities have ten acres of open area right in their heart. The Mall, started so proudly over a generation ago, is still waiting for complete enclosure and a *raison d'être*—for the city grew away from it. Perhaps the new hotel proposed to be built there will pull the downtown back—if it's ever built.

I can't include Toledo and Cincinnati in my comments, because I was snowed and frozen in in the former city, and drenched with rain during my few hours in the latter.

After ten days in the frozen north, and three or four in miserable winter Washington, I set out for two weeks in Miami—where I had ten days of perfect Chamber of Commerce weather. I called on Roger Sherman, of the *Florida Architect*, but missed him. His charming and capable wife showed me around the new DuPont Plaza Building. Very handsome indeed; I hope it prospers. I was on my way to visit Ken Lichty, AIA, in Boca Raton, so I brashly steered my course through Miami Beach, for I hadn't seen it for several years. I have now seen it for the last time. Speaking of cityscape—and I was—I have now seen the worst. All the way up Collins Avenue, for what seemed like miles through heavy traffic, nothing but great glittering hotels, as "modernistic" as Hollywood, elbowing each

other for their few feet of beach front, with continuous clap-trap and honky-tonk on the other side of the street. There is one little park, where in past years the public could use the beach, now hemmed in by hotels and parking. What a breath of fresh air it was to suddenly come into the city of Bal Harbour, where the street widens, with a park strip in the center, and the hotels are set back and widely apart with broad lawns and planting, the inland side of the street being lined with attractive two- and three-story apartments with plenty of air and green space. After perhaps a half-mile of that, confusion again.

During this month or so of travel, I managed to get two widely different books read: C. M. Bowra's "The Greek Experience" and Jack Kerouac's "On the Road." I commend them both to you; the first as a rich and absorbing intellectual experience, and the second as an equally absorbing introduction into an America that I'm sure most of us never knew existed, and an America that is just as real and just as valid as our own. Now I understand what Christopher Tunnard meant when he said in an address to the American Studies Association of Texas last December, that Kerouac and the other writers of the "beat" school have "a sense of the modern city not to be found in older writers." He said they "have discovered another dimension to American living, a secondary landscape, and are in tune with the extension of the city to the dimensions of the continent. Instead of rejecting it as older writers have done, they carry it comfortably with them wherever they go . . . and they go far." They have "accepted time and motion, they have accepted the city as a natural phenomenon alternately exhilarating and bewildering."

BTRG

Building Type Reference Guide No. 8-1

Executive Architecture

BY CLINTON H. COWGILL, FAIA

TAKEN TOGETHER, commercial buildings and public buildings account for about a third of all non-residential buildings.¹ *Executive architecture* (buildings to house executives and their assistants) includes important segments of both commercial and public buildings.

The rapid erection of office buildings is changing the character of many cities. The editor of the *Architectural Review* of London was probably thinking primarily of distinguished examples of non-government office buildings when he paid American architects the following tribute: "In the first decade of the twentieth century's second half, the United States of America is emerging as a leader in the art and practice of architecture."

The tribute quoted above was inspired by buildings with functionally expressive curtain walls. "It is no exaggeration to say that the curtain wall is transforming the urban environment of America."² Fourteen architectural firms were cited as architects of "classic examples."

While the most spectacular of the commercial office buildings have metal and glass curtain walls, some buildings for governments are still designed to simulate stone construction, and masonry walls are used

for a large number of commercial office buildings. (A basis for choice of material is discussed on page 62).

Commercial office buildings may be intended for rental investment or they may be primarily for the housing of a single corporation. Government office buildings may be for occupancy by unknown agencies, either permanently or temporarily, or by a single government agency. The same kinds of office space are demanded in both government and non-government buildings. Economy and flexibility are now recognized as essential for both. Discussion of the design of offices for the practice of law,³ medicine⁴ and dentistry is outside the scope of this article.

orientation:

If an office building is not to be cooled mechanically, it is important that it be located and designed so as to take advantage of cooling breezes. A long narrow block placed perpendicular to the direction of prevailing summer breezes may be adequately cooled without refrigeration in the generally cooler areas, such as the north-central and western mountain sections of the U. S.

If year-round airconditioning is resorted to, comfortable inside temperatures are usually obtainable, but the cost may be affected by location and

design of the building. Cooling breezes may help some by lowering summer temperature of exposed walls and roofs, but it is more important to keep the area of exterior enclosure as small as possible — especially walls which are exposed to the sun. In cold climates and hot, a square block is advantageous, and rectangular blocks should have the long axis on the east-west line or making an angle of less than 30° with it.

These considerations may influence selection of the site, but once a site has been selected, the orientation and shape of a proposed building may be largely determined by other factors—especially if the building must cover a large proportion of the site. Consideration may be given, however, to adding stories so that all but a low portion of the building may approximate the optimum orientation and shape—or even to using a portion of the site as a plaza. The most desirable exposure is generally north, but east, west or south walls which are shaded by other buildings, trees, louvers, canopies or deep patterned screens may give comfortable interior spaces at a reasonable cost.

¹ *The Architect at Mid-Century*, Vol. 1, p. 19 (Reinhold, 1954).

² *Arch Review*, London, Apr 1957:295.

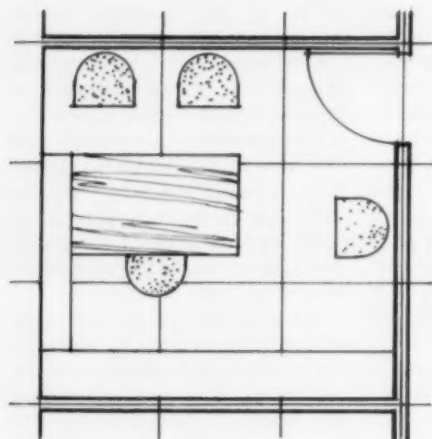
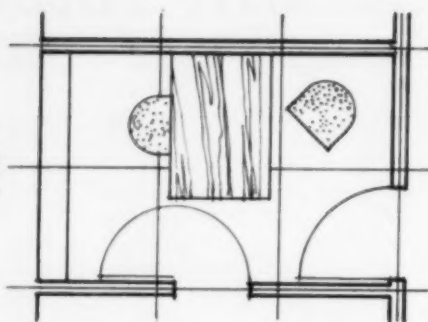
³ An article on law offices will appear in the *AIA Journal* in the near future.

⁴ See "A Planning Guide for Establishing Medical Practice Units," edited by The American Medical Association.

Modular Design:

Here and on the following pages are some selected sizes of modular executive offices for modular planning with maximum flexibility.

Module	Office	Desk Area
3'-8"	7'-0" x 10'-10"	52x32 76
4'-0"	7'-8" x 11'-10"	60x40 91
4'-4"	8'-4" x 12'-10"	66x40 107



Module	Office	Desk Area
3'-8"	10'-8" x 10'-10"	60x34 116
4'-0"	11'-8" x 11'-10"	66x40 138
4'-4"	12'-8" x 12'-10"	66x40 163

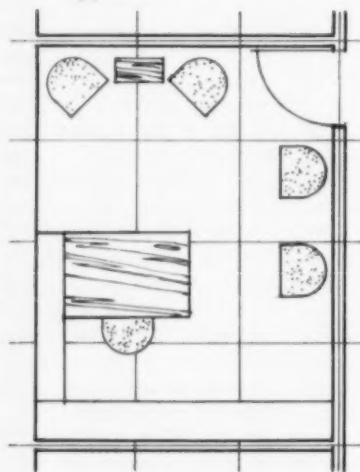
For flexibility and economy, modular design is now widely followed, but for some buildings the planning module chosen has not been a multiple of the standard 4" unit. While for large buildings, components of any reasonable size may be obtained at approximately the cost of stock components, the use of prefabricated components will increase when they are more generally available in stock sizes, and it would be advantageous if stock sizes fit the standard 4" modular pattern. Some buildings for which the planning module is not a multiple of 4", are planned for the use of modular materials. For example, in the Inland Steel Building and the Reynolds Metals Headquarters, a 2" divider strip is run through floors, walls and ceilings every 5'2". This makes the planning module 5'2" but the 60" space between these strips is modular.

Based upon a study of office space needs, design modules of 3'8", 4'0", and 4'4" are recommended—choice may be influenced by resulting office sizes. Dimensions, areas, and the sizes of the largest standard desks which may be used are given on these pages, using each of these modules and with 4" partitions.

The choice of module may be influenced also by consideration of larger offices and other working spaces (possibly by arranging selected pieces of furniture).

The choice of the design module dimension may also be influenced by how it fits into the site dimensions, and the structural layout. Over-all dimensions for different numbers of modules with an allowance of one foot for the thickness of each wall are as follows:

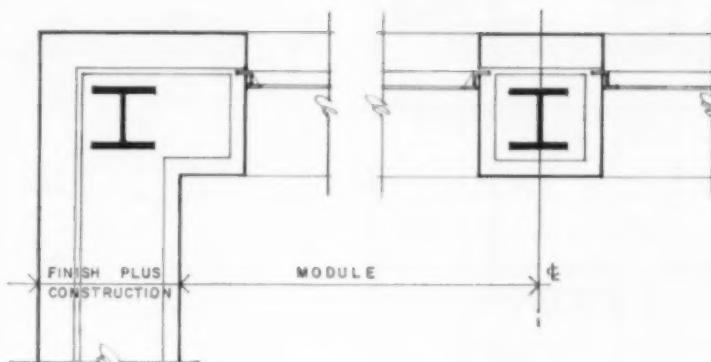
Module	Office	Desk Area
3'-8"	14'-4" x 10'-10"	60x40 155
4'-0"	15'-8" x 11'-10"	60x40 185
4'-4"	17'-0" x 12'-10"	60x40 218



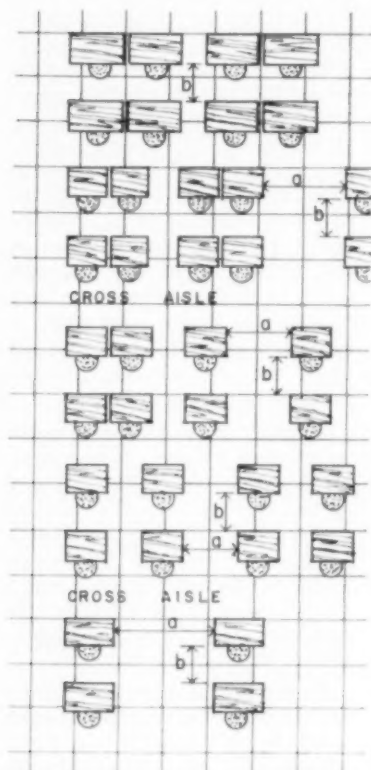
MODULAR DIMENSIONS

number of modules	dimensions		
	3'-8"	4'-0"	4'-4"
4	16'-8"	18'	19'-4"
6	24'	26'	28'
8	31'-4"	34'	36'-8"
10	38'-8"	42'	45'-4"
12	46'	50'	54'
14	53'-4"	58'	62'-8"
16	60'-8"	66'	71'-4"
18	68'	74'	80'
20	75'-4"	82'	88'-8"
22	82'-8"	90'	97'-4"
24	90'	98'	106'
26	97'-4"	106'	114'-8"
28	104'-8"	114'	123'-4"
30	112'	122'	132'
32	119'-4"	130'	140'-4"
34	126'-8"	138'	149'
36	134'	146'	157'-8"
38	141'-4"	154'	166'-4"
40	148'-8"	162'	175'
42	156'	170'	183'-8"
44	163'-4"	178'	192'-4"
46	170'-8"	186'	201'
48	178'	194'	209'-8"
50	185'-4"	202'	218'-4"

Dimensions given are for even numbers of modules—for the dimension of an odd number add the modular dimension to the dimension given for next lower even number.



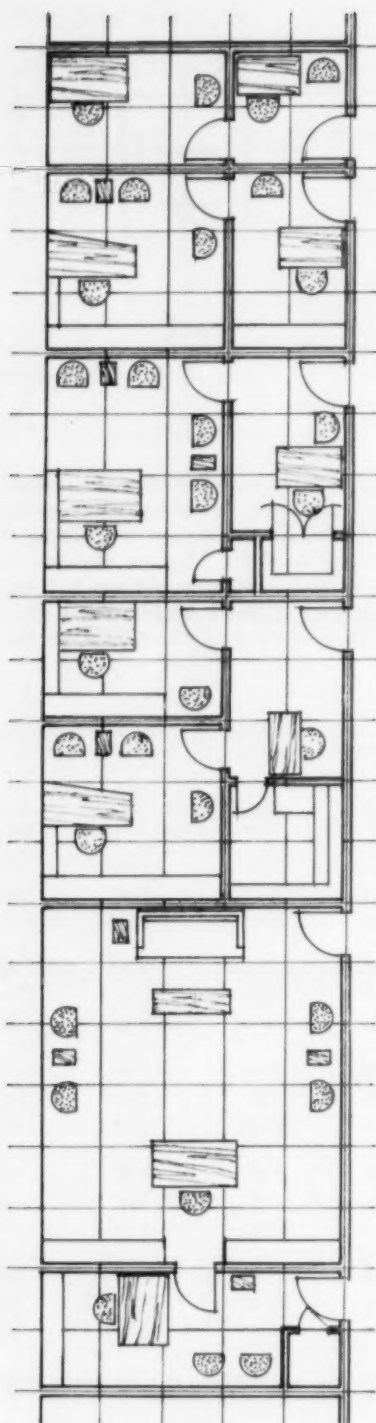
The plan diagram above indicates the assumed relationship of structural columns to the exterior wall. For larger more widely spaced structural columns, more than 1'0" should be allowed at each end of building if projections on inside of wall are to be avoided. Thus, to the over-all dimensions given in the table above, twice the difference between 1'0" and this allowance would be added. To make standard design modules fit a given site dimension, it may be necessary to use fractional modules at one or both ends.



The diagrams below indicate possible modular arrangements of spaces from three to seven modules wide, for clerical and stenographic employees:

Modular Work Spaces			(a)	(b)	(c)
Module	Space	Desk	Center Aisle	Between Desks	Area Desk
3'-8"	4'-2" x 5'-6"	50x32	5'-8"	2'-10"	36
4'-0"	4'-10" x 6'-0"	58x32	5'-0"	3'-4"	42
4'-4"	5'-0" x 6'-6"	60x34	8'-4"	3'-8"	49
3'-8"	3'-4" x 5'-6"	40x30	5'-0"	3'-0"	30
4'-0"	3'-6" x 6'-0"	42x32	7'-8"	3'-4"	36
4'-4"	3'-8" x 6'-6"	44x32	10'-4"	3'-8"	42
3'-8"	3'-4" x 5'-6"	40x30	4'-4"	3'-0"	34
4'-0"	3'-8" x 6'-0"	44x32	5'-8"	3'-4"	40
4'-4"	3'-9" x 6'-6"	45x34	8'-6"	3'-6"	47
3'-8"	4'-2" x 5'-6"	40x30	3'-8"	3'-0"	40
4'-0"	4'-10" x 6'-0"	44x32	5'-0"	3'-5"	48
4'-4"	5'-0" x 6'-6"	45x34	7'-6"	3'-8"	56
3'-8"	4'-2" x 5'-6"	50x30	7'-4"	3'-0"	60
4'-0"	4'-7" x 6'-0"	55x30	8'-6"	3'-2"	72
4'-4"	5'-0" x 6'-6"	60x34	9'-8"	3'-8"	84

- (a) All other aisles are 3'-0" wide; center aisles approximately as given. Where center aisle exceeds 8'-0", dividers may be placed between pairs of desks.
- (b) Where distance between front of one desk and rear of another exceeds 3'-0", dividers may be placed along front edges of desks.
- (c) Area per desk is approximate, with allowance for all aisles.



Module	Office	Area
3'-8"	7'-0" x 18'-2"	127
4'-0"	7'-8" x 19'-10"	154
4'-4"	8'-4" x 21'-6"	179
3'-8"	10'-8" x 18'-2"	195
4'-0"	11'-8" x 19'-10"	250
4'-4"	12'-8" x 21'-6"	273
3'-8"	14'-4" x 18'-2"	260
4'-0"	15'-8" x 19'-10"	308
4'-4"	17'-0" x 21'-6"	355
3'-8"	18'-0" x 18'-2"	327
4'-0"	19'-8" x 19'-10"	390
4'-4"	21'-4" x 21'-6"	458
3'-8"	29'-0" x 18'-2"	525
4'-0"	31'-8" x 19'-10"	630
4'-4"	34'-4" x 21'-6"	740

Clear spans from wall to wall are 2'0" less than dimensions given in table above, and if interior columns are used, the distance from inside face of wall to center line of column or from center to center of columns are 2'0" less than dimensions given above. For greatest flexibility in use of space, as few interior columns should be used as is feasible, and finished dimensions of columns (with spaces for pipes, etc.) may well equal a module or a major fraction of a module. It is particularly desirable to keep columns out of spaces which are likely to be subdivided with movable partitions. To determine whether or not clear spans (or widely spaced columns) are economical, the estimated extra cost may be compared to expected extra rental income.

choice of materials:

The time is fast passing when an architect can select all materials for a proposed building intuitively. It may be necessary, in some cases, to choose an unsuitable material because its first cost is lowest. Thus when a client's need for space is great in relation to the amount of his appropriation, he may unwittingly force his architect to make selections which are uneconomical in the long run. On the other hand, for some projects, all consideration of cost may be ignored in the choice of especially desirable materials or items of equipment. For most projects, however, the architect seeks to determine which of available items for each purpose will have greatest value in relation to cost. In some cases, at least, this determination involves mathematical analysis.

A mathematical analysis may not include such intangible factors as esthetic appeal—appearance, appropriateness, comfort, etc. When cost per year's use is determined for each competitive item, then it may be judged whether or not those higher in cost are worth the difference. In commercial buildings, differences may be reflected in rental rates.

In the following example of this kind of mathematical analysis, metal and glass curtain walls are compared with masonry panel walls. First the

factors which apply to both are eliminated. It is assumed in this example that:

- 50% of wall surface is glass
- rates of depreciation and insurance are the same
- salvage value at end of commercial life is the same
- insulating qualities are the same

It follows that heating, cooling, lighting, and power costs (including fixed charges on such equipment) may be ignored. Difference in cleaning costs is negligible. Following cost differences per square foot of exterior surface are taken from a study by Clayford T. Grimm and James G. Gross of the Structural Clay Products Institute:^{*}

initial capital cost of wall,		+\$3.70
structural frame cost	— \$0.25	
space occupied by wall	— 0.44	
carrying charges (12 months)	— 0.02	
totals	— \$0.71	+\$3.70
net difference		+\$2.99

It is assumed that the building used as an example is 80' x 256' with ten 12' stories (floor to floor) and four square feet of rentable floor area per square foot of exterior wall (not including windows). Each dollar increase in wall cost results in a 25-cent increase in cost per square foot of rentable area. The increased rent necessary for an 8% return on this extra investment is:

$$\begin{aligned} \text{rent} &= (\text{RR} \times \text{C}) \text{ plus } \text{E} \\ &= (0.08 \times 0.25) \text{ plus } 0 \\ &= \$0.02 \end{aligned}$$

RR = rate of return
C = extra capital
E = increased expense

Since the extra capital cost is \$2.99 per square foot of wall, the increased rent is approximately six cents per square foot of rentable area. If the masonry building would rent for \$5.00 per square foot of rentable area, for the building with metal curtain walls to be economically feasible, it should rent for at least \$5.06. For an office 8'4" x 12'10", the rent must be increased from \$44.61 per month to \$45.14 or 1.2%.

^{*}Ultimate Cost of Building Walls. (See also AIA Journal, Sept 1958; pages 55-68.)

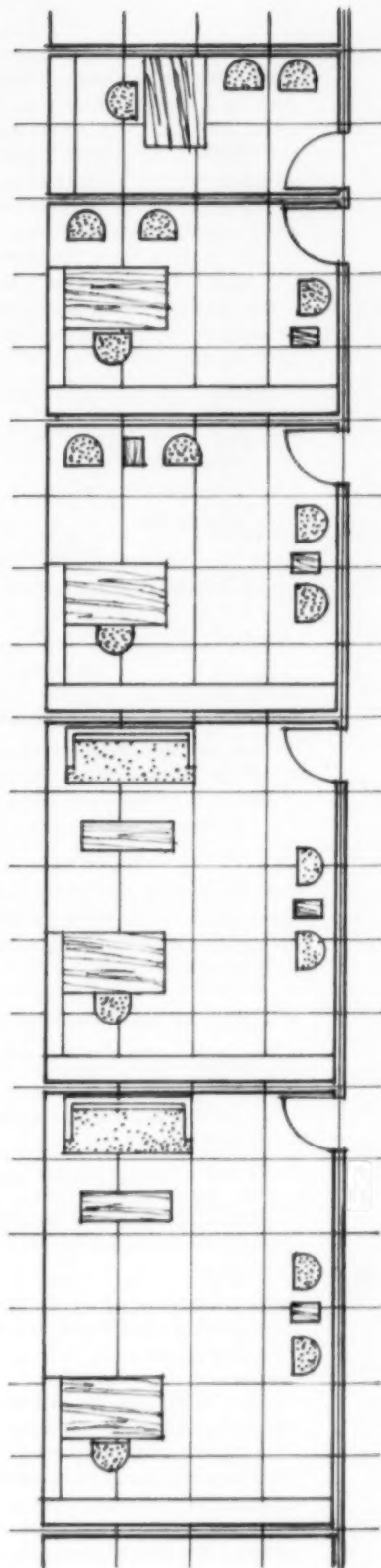
Module	Office	Desk	Area
3'-8"	7'-0" x 14'-6"	52x32	102
4'-0"	7'-8" x 15'-10"	60x40	123
4'-4"	8'-4" x 17'-2"	66x40	142

3'-8"	10'-8" x 14'-6"	60x34	155
4'-0"	11'-8" x 15'-10"	66x40	186
4'-4"	12'-8" x 17'-2"	66x40	217

3'-8"	14'-4" x 14'-6"	66x40	208
4'-0"	15'-8" x 15'-10"	66x40	248
4'-4"	17'-0" x 17'-2"	66x40	290

3'-8"	18'-0" x 14'-6"	66x40	256
4'-0"	19'-8" x 15'-10"	66x40	312
4'-4"	21'-4" x 17'-2"	66x40	357

3'-8"	21'-8" x 14'-6"	66x40	314
4'-0"	23'-8" x 15'-10"	66x40	378
4'-4"	25'-8" x 17'-2"	66x40	438



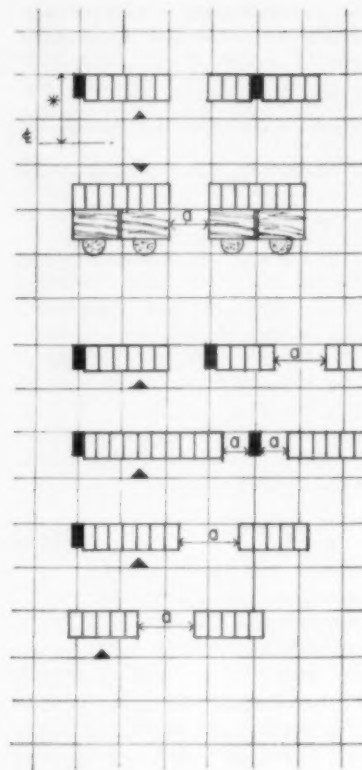
Filing cases may be used as room dividers and fit a modular layout as indicated below:

Module	Space*	File	(a) Center Aisle	(b) Area File
3'-8"	1'-3" x 5'-6"	(15x28) 26	4'-0"	11
4'-0"	1'-3" x 6'-0"	(15x28) 30	3'-8"	12
4'-4"	1'-6" x 6'-6"	(18x28) 26	6'-4"	15
3'-8"	1'-3" x 7'-4"	(15x28) 9	5'-7"	18
4'-0"	1'-3" x 8'-0"	(15x28) 11	4'-6"	19
4'-4"	1'-6" x 8'-8"	(18x28) 10	4'-10"	22
3'-8"	1'-3" x 7'-4"	(15x28) 8	(3'-2") 2	16
4'-0"	1'-3" x 8'-0"	(15x28) 10	(2'-6") 2	16
4'-4"	1'-6" x 8'-8"	(18x28) 9	(2'-11") 2	21
3'-8"	1'-3" x 7'-4"	(15x28) 5	8'-0"	20
4'-0"	1'-3" x 8'-0"	(15x28) 7	5'-8"	18
4'-4"	1'-6" x 8'-8"	(18x28) 7	4'-4"	21
3'-8"	1'-3" x 7'-4"	(15x28) 4	5'-4"	19
4'-0"	1'-3" x 8'-0"	(15x28) 5	5'-2"	19
4'-4"	1'-6" x 8'-8"	(18x28) 5	4'-4"	22

* Dimension from back of file to c of cross aisle.

(a) Other aisles are 3'-0" wide; central aisles approximately as given.

(b) Area per file approximate with allowance for aisles and spaces in front of files. Spaces in front of files may be used as cross aisles.



The difference, calculated as indicated above, is different, of course, for each project. The analysis should be based upon:

- quotations for materials delivered to site
- labor costs as estimated by two or more contractors
- allowance of 10%-20% for contractor's overhead and profit
- structural engineer's advice regarding extra cost of structural frame (based upon design and detailed estimate of a typical floor panel with its column and footing)
- extra space occupied by masonry wall multiplied by total building cost per square foot

Glass walls may be compared to metal curtain walls in much the same manner; but the analysis is more complicated, because it is necessary to include differences in heating, cooling, and illumination costs. Some comparisons may be made, however,

without resort to arithmetic, as follows:

For efficient daylighting, it is well known that window heads should hug the ceiling and that natural light is effective only to a distance from outside wall approximately double the distance of window head from floor. This is effective on north side of a building. On other sides, unless tinted glass is used or glass is shaded, occupants usually keep curtains drawn or venetian blinds down, to avoid glare, and turn on the lights. Fully effective window-shading devices may interfere with a view, but they do not destroy psychological contact with outside. Since it is recognized that glass walls are more expensive than either masonry or metal curtain walls, the wisdom of placing glass nearer to floor than 30" can be questioned. If interior is to be cooled, shading devices will be economical in any climate in which cooling is justified by reducing cooling (as well as heating) load.

If lighting is to be artificial, the value of glass areas above eye level (when standing) may be questioned. While a favorable psychological reaction may result from a continuous horizontal band of glass from 30" above floor to 6', a minimum contact with outside is maintained with half of this band solid. With a floor-to-floor dimension of 12', this would result in about 16% glass, and will be found to be much lower in annual cost than walls designed for maximum daylighting.

For buildings which are airconditioned the year-round, windows need be opened only in emergencies, and to facilitate window washing. If washing is to be done from an exterior scaffold, all glass may be fixed (and small louvered ventilators under windows may be an economical means of providing for emergencies) but most shading devices interfere with use of hanging scaffolds. Excessively large or numerous ventilators will be opened unnecessarily,

thus increasing heating and cooling costs significantly.

Partitions may be selected in much the same manner as exterior walls. In addition to choosing the best buy among competing modular units, it may be necessary to compare annual ownership cost of these with that of solid plaster or gypsum block partitions. Extra space taken by gypsum partitions must be considered. To express the comparison in annual cost, the frequency of demounting or demolition must be assumed. Those partitions least frequently disturbed might be of plaster or gypsum and others be demountable.

Choice of ceiling involves decisions regarding airconditioning and illumination. If radiant ceiling panels are used for cooling and heating, perforated metal acoustic tile is indicated. This would mean that the ceiling area devoted to illumination would be limited. If a luminous ceiling is desired, metal screen may be used with sound absorbent material above, between lights and below ducts. If hanging indirect (or direct) fluorescent fixtures are used, acoustic tile of rigid insulation material or either acoustic or non-acoustic plaster may be chosen for ceiling. For greatest flexibility in use of demountable partitions, the ceiling should be level and without projecting beams or girders. This can be accomplished by means of a suspended ceiling, by closely spaced beams with deep fillers between, or by a flat concrete slab—solid or with fillers—and it may be a "lift slab." A solid slab may contain electric conduits and other piping; if piping is placed above a suspended ceiling, demountable ceiling units are desirable. Ceiling units and electric fixtures should be modular. Standard units 12" x 12" fit a 4'0" module, units 11" x 11" fit a 3'8" module, and units 13" x 13" fit a 4'4" module.

If all materials are selected with careful analysis, more investigation and study may be required than most architects can find time for. In many an architect's organization a specification writer might undertake the task—in large organizations one or more persons may devote full time to such study. The AIA Building Products Registry Service will be helpful.

amenities:

Buildings may please their owners, occupants and the public if they are good to look at—and sensitive persons may be lifted spiritually. Occupants of buildings, however, may react more strongly to comfort or discomfort. For comfort, buildings may need to be electrically illuminated and airconditioned, and they should have ample, well-located plumbing, and means of communication. Elevators should be placed within reasonable distances from working spaces and entrances, and parking spaces should be provided near-by. Finally it may be necessary to provide dining facilities, recreation spaces, and such concessions as news and cigar stands, barber shops, beauty parlors, etc.

Very few buildings may be designed without giving consideration to selection and placing of fixed equipment. Not only must suitable space be provided in appropriate places; but since cost of equipment may be such a large proportion of total building cost, many decisions concerning equipment must be made during early stages of a project. After deciding what kinds of equipment shall be used, actual selection of items may be undertaken.

Selection of equipment frequently affects exterior and interior appearance. If reasonable heating and cooling costs combined with low cost electrical illumination lead to design of large simple blocky forms with few if any light-courts, the effect of this may be as significant as was the effect of elevators on development of the skyscraper. Effect of devices for shading windows (which may accompany designs for cooling of buildings) is frequently spectacular.

One of the first decisions to be made in connection with design of an executive building is whether or not it shall be cooled in summer. For government buildings this decision may be based upon the number of days per year on which local temperature exceeds a stated figure, for commercial buildings it is influenced more by competition. Cost of cooling is least where it is least needed—not only because less electric current is used but also because with less use

the equipment will last longer. Calculation based upon data given in the ASHAE Guide (assuming an average condition in which a ton of refrigeration is required for each 333 square feet of floor area) indicates an annual cost of approximately 30 cents per square foot of floor. For a minimum office 7'0" x 10'10" (75.81 square feet) this would mean a rent increase of about \$1.90 per month—6% if rent without airconditioning were \$5.00 per square foot per year.

For cooling, there are available:

- window units
- self-contained interior units
- low pressure duct systems
- high pressure duct systems
- convectors

Self-contained window coolers have the disadvantages of:

- providing either more or less than needed capacity
- being subject to possible mistreatment by building occupants and others
- difficulty of avoiding drafts
- hastened deterioration due to lack of protection from weather (or cost and inconvenience of providing protection)

Possible advantages are:

- giving tenant choice of acceptance or rejection of cooling
 - eliminate ducts and piping
- Self-contained units which recirculate all of the air (from 1½ tons to several tons capacity) have similar advantages and disadvantages.

Low pressure duct systems for cooling have the following disadvantages:

- difficult to balance and control effectively
- difficult to avoid drafts
- require space for ducts, which are often difficult to conceal

High pressure duct systems take less duct space but must be designed with care to avoid noise. They may provide more local temperature control. Duct systems may be used for both cooling and heating.

Systems using cooled water to cool air by means of convectors with fans may also be used for both cooling and heating. They make it possible to control temperature in each room. Cooled water (heated in winter) may

also be used in radiant panels in ceilings or walls (particularly under windows); and radiant ceiling panels may also be used with convectors.

Unless heating system is combined with cooling system, or if no cooling is provided, the choice is between air, steam and water. Except for small buildings, air is heated by indirect steam or hot water heaters. This system is suitable for heating large rooms and may also provide ventilation, humidity control, and air filtration. For smaller rooms, air may be delivered under high pressure, and both hot and cold air may be delivered and mixed as controlled by local thermostat. Steam may be used in much the same manner as hot water, but for better control of temperature, steam should be used to heat water for circulation. Old-fashioned radiators heated space both by radiation and convection; the more modern convectors heat air within a room, which in turn raises surface temperature of ceilings, walls, floor, and furniture. Radiant panels in the floor heat persons, furniture and ceiling by radiation, and also heat air near floor causing convection currents and thus gradually raise temperature of air. If radiant panels are in ceiling, the surface temperature of floor is raised due to radiation. With any heating system, cold drafts from windows should be arrested by radiant panels or convectors.

There is a growing recognition of the lesser role to be played by ventilation, but the public must be informed before we can avoid any appreciable amount of the waste which now results from heating or cooling air and exhausting it from buildings. Development of means of eliminating odors makes it possible to recirculate the major part of the air which is either heated or cooled. Effectiveness of this has been convincingly demonstrated on the atomic-powered submarines. Even though a wasteful amount of air is exhausted and outside air brought in through ducts, many people still think they must open windows in order to get "fresh" air. As everyone knows, the need for oxygen is but a fraction of that usually provided by an airconditioning or ventilation system.

In a modular office building, it is important that illumination, heating, and cooling be provided, in so far as it is possible, within each square module of space. Electric outlets, telephone outlets, and intercommunication system outlets should be adequate for any possible division of space.

For rented space, a wash basin should be provided for as many offices as practicable, and a certain number of office suites should include private toilet rooms. The utility core should include men's and women's toilet rooms on each floor (except for small office buildings) — one water closet (or urinal) and one wash basin for each 15° occupants. Pipe space 18" wide should be provided behind each row of plumbing fixtures.

Office buildings housing large groups may require pneumatic tube systems as well as separate private telephone switchboards. To make it possible to install these and other special systems as demanded, the space above a suspended ceiling should be accessible, and openings through girders should be provided.

Number and size of elevators may be determined by an elevator specialist (when available) from the following data:

- number of floors served
- floor to floor dimensions
- distance from entrance floor to top floor
- location in city
- population of building
- location of restaurant, garage & auditorium

When it is necessary for an architect to make a tentative determination of number and approximate size of elevators required, the average

time a passenger must wait for an elevator must first be assumed. This is determined by quality of service desired and ranges from 20 to 40 seconds. For a preliminary calculation, 30 seconds may be assumed. Determination of required passenger carrying capacity (maximum number of people to be accommodated in 5 minutes) involves many factors. Factors determining optimum number of elevators are inter-related. For example, intensity of demand for elevator service is generally greater in relation to building population in single-occupancy office buildings than in office buildings with diversified occupancy. On the other hand, single-occupancy buildings may establish staggered working hours, and with rigidly enforced staggered hours in a single-occupancy building, the peak demand for a 5-minute period may be less than 10% of building population. With no control of working hours in a building with diversified occupancy the peak usually ranges between 10% and 15%; and without control in a single-occupancy building, peak may range up to 30%.

Other factors which may influence peak demand are:

habits of occupants, such as going out for coffee

services available on each one or two floors

schedules of public transportation facilities serving building occupants

Passenger-carrying capacity of single elevator varies with size, speed, and travel distance. See table below for approximate number of passengers carried by typical elevators.

**In toilet rooms serving over 60 persons, the number per fixture may be progressively increased.*

PASSENGER LOAD OF TYPICAL ELEVATORS

capacity in pounds	speed ft/min	travel feet	passengers per trip	5 min	round trip seconds	stories above
2500	350	150	13	28	138	12
2500	500	150	13	32	123	12
3000	500	175	16	33	144	14
3000	700	250	16	32	148	20
3500	800	350	18	32	166	29
4000	1000	400	21	35	180	33

Approximate number of elevators required is the required passenger-carrying capacity divided by the capacity of one elevator of type selected. Thus for a 20-story building with 12' stories, a population of 2,000, and a maximum interval of 30 seconds, the required passenger-carrying capacity at 13% of total population is 260 people. If an elevator of 3,000-pound capacity is selected to operate at a speed of 700 fpm, number of elevators required would be: $\frac{260}{32} = 8$. Final selection might be elevators with different specifications, and actual number for most economical installation may turn out to be 7 or 9.

Amount of off-street automobile parking required may be stated in zoning laws. Amount needed will vary due to differences in the adequacy of public transportation fa-

cilities and the amount, quality and location of housing. Until improvements are achieved in these aspects of urban development, parking spaces will be needed (somewhere) in many cities for one car for every four building occupants. Buildings with offices for rent might provide for parking economically in the center space of a massive block. For government office buildings, parking might be provided in basement, sub-basements, and spaces under plazas. It has been suggested that such spaces also serve as civil defense shelters.

permanence

In the rebuilding of our cities which is taking place, we should be able to do so well that the next generation will not want to do it all over again. Our climate causes comparatively rapid deterioration of

many building materials, but relatively few buildings have deteriorated beyond repair by the time they are demolished. Had they been designed more skillfully and had city plans been more wisely carried out, they would be preserved and the energy devoted to their demolition and replacement would be used for other needed buildings. Many of our newer materials will prove to be more permanent than some of those which are more traditional. By using these materials and designing buildings for flexibility in use; and by securing compliance with wise zoning laws, building codes, and city plans; and finally (and perhaps most important) by employing good taste, with simplicity and an agreeable degree of richness, perhaps we can get our cities rebuilt before we again start to destroy them.

Bibliography

I. General Discussions

a. Books (alphabetically by titles)

Architectural Graphic Standards; Charles G. Ramsey and Harold R. Sleeper, FAIA; Wiley, N. Y., 5th edition, 1956, 758 pp. Office furniture pp. 449-54; closet equipment pp. 462; noise reduction coefficients p. 595; plumbing pp. 520-1; sun shades pp. 502-16; elevators pp. 556-70; escalators p. 571; pneumatic tubes p. 572-8

Building for Investment; Clinton H. Cowgill; Reinhold, N. Y. 1951, 482 pp. Office buildings, pp. 95-120; economic height; design, flexibility, modular, partitions, elevators, illumination, air conditioning, financing. Public buildings, pp. 191-7, pp. 240-4; as investments, timing; construction, pp. 267-96; codes; capital costs vs. repair costs, etc.; fire resistance; atomic age; flexibility; fine art of architecture; building cost and land cost. Site selection, pp. 299-320; land values; urban plan, zoning, transportation, adjacent areas, depreciation.

Building Planning and Design Standards; Harold R. Sleeper, FAIA; Wiley, N. Y., 1955; Office Buildings, pp. 145-61. Location and site considerations; finance; structural bays; office areas 400,

140, 100, 90 and 70 square feet; space allotments 75 to 100 square feet; conference rooms 25 square feet per person; modular planning; desk spaces 6'2" x 7'6"; corridor widths 3'0" to 8'0"; letter file case space 15" x 60" (to 72"); modular desk units; architect's offices.

Life Insurance Buildings; Arthur O. Angilly, AIA, for Office Management Association, N.Y. 1954, 142 pp. Program by company planners with architectural consultant combined with schematics. Investigation by Building Council of needs, relationship, cost and quality. Review, layouts and estimates. Design development, illustration. Construction documents, construction administration.

Modern Office Buildings; Michael Rosenauer, FRIBA, AIA; Batsford, London, 1955, 163 pp. Zoning and orientation; planning approach; typical floor with maximum width of 60 feet. Modular design for flexibility; inner core for utilities; ground floor with rental space, concessions and vestibule, patio and arcades. Basement with garage, delivery space and service.

Story of the Tower; F. L. Wright; Horizon Press, N.Y. 1956, 132

pp. Skyscraper on the plains, 17 stories with two story wing. Offices and apartments, shops on first floor and Public Service Co. offices on first and second floors. Parking spaces and carport. Floors of concrete with steel mesh, spandrels concrete faced with ornamental copper.

b. Articles (alphabetically by subject)

Air conditioning; office buildings. il plans diag *Progres Arch* 39: 116-25 Mr '58.

For large buildings recommend perimeter high-velocity induction system; in winter cold duct with 85% and hot duct with 15% of required air to main supply duct; cooling with chilled water. Medusa Portland Cement Co. office building at Cleveland Heights, Ohio, has high velocity air delivered to ceiling and finned radiation under windows.

American office practice; planning the tall office building; with discussion E. J. Kahn il *Roy Inst Brit Arch J* s 3 v 64: 443-51 S'57

Building owner's incomes hit peak in 1957; *Arch Forum* 109: 11 Ag '58

Vacancies in buildings reported by the National Association of Building Owners and Managers 3.64%; rents average \$3.47 per square foot; expenses \$2.59 per square foot; net operating income 97.1 cents per square foot.

Earning power of plazas. F. Fogarty. *il plans Arch Forum* 108: 106-9 Ja '58

Pittsburgh's Gateway Center, \$4.77 per square foot (25 to 50 cents more than previous top rent); Penn Center in Philadelphia appears to be profitable; Mile High Center in Denver rents at \$5.50 to \$6.00 per square foot (\$3.50 previous top) and nets 4½% on cost of \$13 million or 8% before finance charges. Chicago's new zoning allows extra stories to buildings which leave open space on site or face a park.

Lighting is Architecture; Seagram Building, 666 Fifth Avenue; Wasco Products Inc; *il plans Progres Arch* 39: 139-43 S'58

Modular architecture; Inland steel building, Chicago, and buildings at New York international airport. *il plans diags Progres Arch* 38: 158-63 N '57

Office Building; M. Goldsmith and J. Ferris, Architects *il plans diags Arch* 75:17 Ag '58

Office Building and Office Layout Planning; Kenneth H. Rippen; in *Office Management*, XX No. 1: 50-2, 162-3. Computation of rentable area; office sizes 20' x 20', 10' x 20', 20' x 15', 10' x 13'; space allotments, supervisors 100 square feet, clerks 65 to 80 square feet. Maximum practical span 35'. Liberal space allowances improve morale, efficiency and provide for expansion. Survey of needs—existing space and with stated expansion.

Office air conditioning: floor distribution. *il diags Progres Arch* 39:124-7 Jl '58. Office building for Whirlpool Corp. at Clyde, Ohio. Structural steel beams form ducts and wiring raceways, provide space for recessed lighting fixtures and sprinkler pipes, structural bays 24' x 20'.

Small office building in a tropical climate, Kenneth M. Murchison prize; program, critique, awards. *Nat Inst Arch Ed Bul* 34: 145-9 Je '58

Selecting, Planning, and Managing Office Space; Beryl Robichaud; McGraw-Hill, N.Y. 1958, 361 pp. Location; build, remodel, buy or lease; layout; furnishing; management.

II. Curtain Walls (alphabetically by titles)

American Hardware Mutual Insurance Co. Building; Curtain Wall Affects Office Module; Thor-

shov and Cerny, Inc; *Progres Arch* 38:141-3 N '57

Wall module of 4'-8". Even spacing causes narrow windows next to columns. Structural steel with marble facings; cellular steel floors with 2½" topping. Stairs at ends and utility core in center. Auditorium and cafeteria in one-story wing.

Machine Made America; *Arch Review* 121:295 Ap '57 America the leader, use of curtain walls and modular coordination for building, equipment and furniture. Painting and sculpture as "foils to the rectilinear backdrop." Curtain walls light in weight, durable, thin, incombustible, weatherproof, removable, self-cleaning. Types, visual characteristics, support. Shading devices usually economical. Classical examples.

Sealing Curtain Wall Joints, by G. J. Shulte in *Progres Arch* 39:128-31

Showcase office building for H. H. Robertson Co, Ambridge, Pa.; O. F. Wiggins, *Arch il Progres Arch* 39:143-5 Je '58

3 stories and basement full-scale model of principal building components produced by this manufacturer, curtain wall system, resin structural panels, cellular floor used for high velocity air conditioning.

III. Interiors (alphabetically by titles)

a. Executive suites for production and also packaged: General Fireproofing's aluminum furniture. *il Interiors* 117:134-7 My '58

Furnishing the modern office. *il Art & Ind* 64:204-7 Je '58

Interior design data; office for H. M. H. publishing co. *il Progres Arch* 39:133-5 Ja '58 Shoji screens, masonite "Peg Board" partitions with Fiberglas insulation; draperies white, beige and black; luminous ceilings, acoustic tile; rugs, black white and gray; asphalt tile.

Metal and mellowed wood make components for easeful offices. *il Interiors* 117:142 N '57 Illustrations and descriptions of office desks and tables.

Module Within: Office Interiors, G. Luss; *Progres Arch* 38:185-91 N '57

Seek maximum efficiency and utilization of space, interchangeability of parts and furniture, expansion. Can be comfortable and esthetically sound without monotony. Lights, flooring and ceiling on same module. Current modules are 4'-0", 4'-2", 4'-3", 4'-4½", 4'-6", 4'-7", 4'-8", 4'-8", 4'-9", 4'-10", 5'-0". Ceiling tiles are 1' x 1' and 1' x 2'; fluorescent fixtures are 1' x 2', 1' x 4', 2' x 2', 2' x 4'; flooring tiles are 6" x 6", 9" x 9" and 12" x 12"; metal

partitions on 6" increments. For maximum use of space, columns should project outside.

Office furniture. *il Interiors* 117: 162-7 O '57 Illustrations of contemporary designs for chairs, desks, cases, sofas.

Skylight dramatics express a design office; interiors by R. Hirsch and J. Cal. O. Guett. *col il plans diags Interiors* 117:126-7 Ap '58

IV. Individual Office Buildings

A. Non-government Office Buildings

1. United States

a. Northeast

Astor Plaza; Carson and Lundin, Kahn and Jacobs; New York City's office building boom is still robust. Astor plaza post-ponelement misinterpreted. *il Arch Forum* 108: 11-13 Ja '58

Chase Manhattan Bank Building; *Arch Rec* 119:10 My '56; *Arch Forum* 106:110-5 Ap '57 Cost, building \$94 million, site \$16 million, furniture, etc., \$11 million, total \$121 million. Provides needs for 25 years. 281' x 107', excavation 80 feet; banking floor below plaza 94,000 square feet, 9000 employees; total usable area 1,700,000 square feet.

CIT Building; Harrison and Abramovitz, *Arch Forum* 108:91-9 Ja '58

Eight stories, 7 elevators; polished granite facade 2 inches thick; ceiling height 9'-3" in clear; column spacing 20' interior, 10' on wall; offices on exterior, work space on interior; width of wing 100'; maximum distance of corridor from exterior wall 60'.

Prudential Center in Boston; Hoyle, Doran and Berry, Pereira and Luckman, *Arch Forum* 106: 7 Mr '57

Site 32 acres @ \$4 per square foot plus 28 acres over railway yards. Included are a city Auditorium seating 6000 (\$7.5 million), 8-lane turnpike, 50-story tower 125 feet square with 750,000 square feet of which 500,000 square feet is for rent, 1000-room hotel, 800 seat circular restaurant, 1250 apartments, 150,000 square feet of retail space, and parking for 5000 automobiles.

Singer Building (1904); Ernest Flagg; *Arch Forum* 106:116-21 Ap '57

Twelve stories of glass curtain wall, wrought iron balconies, terra cotta column facings.

Time Building; Harrison and Abramovitz; *Arch Form* 108:91-9 Ja '58

Forty seven stories, 1,525,000 square feet, limestone column facing, spacing 28'. Air condi-

tioning risers in mullions; window module 4'-8", sills 2'-6"; spandrels clear glass backed with aluminum mesh. Space module 4' x 4'-8", offices 8'-0" x 9'-4", 8'-0" x 14'-0", 9'-4" x 16'-0", 14'-0" x 16'-0", 16'-0" x 18'-8", all reached via short stub corridors.

b. Middle West

ACI Headquarters, Detroit, Michigan; Yamasaki, Leinweber & Assoc.; il plans diags *Progres Arch* 39:121-8 O '58 *Arch d'Anjou* 'hui 29:57 Ap '58

Precast folded concrete plate roof. Precast grille sun shades on east and west ends, and for basement windows; north and south walls glass with overhanging roof. Aluminum and asbestos cement board partitions.

Cleveland's illuminating building; Carson and Lunden, Architects il plans diags *Arch Rec* 123:153-62 Je '58

Twenty two stories, 400,000 square feet, parking for 450 cars, 65 x 300 foot plaza. Module 4'-0" x 4'-4 3/4". Structural columns set back 2'-0". Concrete frame, raft foundation.

Guarantee Mutual Life Co. Headquarters, Leo A. Daly Co., Architects, Temple on a Hilltop Almost; by R. A. Miller; il plans *Arch Forum* 109: 114-19 O '58

A criticism.

Inland steel building and its art. E. Kaufmann, jr. il (pt col) plans *Art in Am* 45 no 4: 22-7 Winter '57-58 Sculpture by Richard Lippold and Seymore Lipton. Oil paintings by contemporary painters. Building benefits from "protruding fins" abstract sculpture in lobby of steel wire.

Inland steel building, Chicago, Skidmore, Owings and Merrill, Architects il plans diags *Arch Rec* 123:169-78 Ap '58; *Progres Arch* 38: 158-9 N '57; *Arch Forum* 108: 88-93 Ap '58 Elevators in wing, long spans, 5'2" module. Stainless steel backed with 2" of concrete, fixed windows, double glass. Floors of steel cellular panels plus 2 1/2" lightweight concrete; ceilings of acoustical metal panels. "The first modern office building in the Chicago loop." Columns project, floors cantilevered.

Siege de l' Institute American du Ciment, Detroit; Yamasaki, Leinweber and Associates, Architect il plans *Arch d'Anjou* 'hui 29:60 Ap '58

Folding plate roof, grille for sun shade

c. Far West

American President Lines Office Building; San Francisco; Anshen & Allen il plans diags *Arch Rec* 124:174-7 S '58 On hillside, 22 stories, floors cantilevered 15 feet. Module 3 feet.

Hawaiian Life Insurance Co. Building; Honolulu, T. H.; Vladimir Ossipoff; *Arch Rec* 117:155-60 Ja '55 Six stories. Vertical sun glare fins of blue, grey and green aluminum; also sun baffles on southwest; west wall blank. Concrete painted white with dark brown spandrels. Ceramic tile a variegated rust-brown. Large air conditioned offices, parking space.

New Fireman's fund building, San Francisco; E. B. Page, Architect il *Arch & Eng* 210:11-19, 43 S '57

Insurance company offices.

Office building; W. Becket & Associates and G. M. Ewing Co., Architects il plans *Arts & Arch* 75:10-11 Ap '58

Sacramento Industrial Indemnity Co. of San Francisco; B. White and J. Hermann, etc; *Progres Arch* 37:111-3 Jl '56

One story, parking space, terrace, clerical space.

Simms Office Building, Albuquerque; M. Flatow and J. Moore; *Progres Arch* 36:104-9 S '55

Twelve story shaft with one story pavillion, upper 10 floors cantilevered, reinforced concrete shallow beam and slab system. East and west walls brick and clay tile with no windows; north and south walls extruded aluminum frame members with insulated aluminum panels and heat absorbing double glass (alternate panes pivoted for inside cleaning); metal partitions. Heat pump, zone control, radiant panels controlled by outside temperature.

Small office building; Killingsworth, Brady and Smith, Architect il plans *Arts & Arch* 75:22-3 Mr '58

d. The South

Hollywood Federal S and L Assoc. Bldg; Gamble, Pownall & Gilroy; Florida S and L office designed for expansion. il plans *Arch Rec* 123:340 Mr '58

Liberty Life Insurance Co. Building at Greenville, S. C.; Carson & Lunden; *Progres Arch* 37:114-7 Jl '56

Four stories, pool at entrance, terrace, cafeteria.

Reynolds Metals Office Building; Skidmore, Owings & Merrill.

Progres Arch 39:39 S '58; *Elec World* 150:60 S 15 '58; *Arch Forum* 109:90-7 S '58; *AIA Journal* XXX No. 6: 42-7 Dec '58

Three stories and basement, basement story forms podium, pool at entrance, hollow square, aluminum louvers on east and west (operated thermostatically) on edge of projecting canopies, canopies on north and south. Site with 37 acres.

Warren petroleum building, Tulsa; Skidmore, Owings and Merrill, Architects il plans diags *Arch Rec* 124:151-8 Ag '58

For sun shading, floors project 5 feet and carry panes of heat retarding glass, form balconies for window washing. Windows fixed and seated, rain leaders at columns. Plaza, garage attached. Twelve stories, 120,000 square feet, floor to floor 13 feet, 108 feet square, 5'-2" module.

2. Foreign

a. Great Britain

Administration building at Shell Haven, Essex; H. V. Lobb and partners Architects il plans *Arch Rev* 122:337-8 N '57

Three stories, reinforced concrete with prefabricated vertical H-beams and inverted T floor beams. Demountable partitions on a 40-inch grid.

Bureaux et Ateliers pres de Tolworth, Surrey, Grande-Bretagne; L. Manasseli and Partners; *Arch d'Anjou* 'hui 28:68-9 F '57

Two stories; glass walls with vents.

Office Buildings; *Arch Review* 123:36-41 Ja '58 Strand, London; Trehearne and Norman, Preston and Partners; 4300 square feet of shops plus 84000 square feet of offices, garage for 60 automobiles and 2 unloading areas with turn tables; precast terrazzo facin reinforced concrete flat beam and hollow pot floors; 8 stories.

Offices in Albemarle street, W1; E. Goldfinger and J. Roberts, Architect il plans *Arch Rev* 123:118-23 F '58

Reinforced concrete with prestressed and prefabricated planks bonded in floors.

Offices at Beckton; E. Mayorcas, Architect il plans *Arch Rev* 123: 410-13 Je '58

Three stories, 40-inch module. Reinforced concrete on piles. Aluminum curtain wall and concrete. Internal partitions 2" demountable units of compressed straw and hardboard facing. Suspended ceilings of aluminum panels.

Offices at Birmingham; J. H. D. Madin, Architect il plans *Arch Rev* 123:236-9 Ap '58

Two stories.

Offices at Cambridge; H. H. Powell, Architect il plans *Arch Rev* 123:343-4 My '58

Four stories, prefabricated reinforced concrete.

Offices at London Wall, E. C. 2; R. N. Waklin and J. M. Thomas, Architects il plans *Arch Rev* 123: 198-9 Mr '58

Eight stories, L-shape, garage for 14 cars. Reinforced concrete on piles, flat slab.

Offices at Newport Pagnel; G. Bowyer and U. Bowyer, Architects il plans diags *Arch Rev* 123:232-5 Ap '58

Two stories, offices for manufacturing company.

Renold house, Wythenshawe, Manchester; Cruickshank and Seward, Architects il floor plans *Arch Inst Brit Arch J* s3 v 65:18-21 N '57

b. Europe

Bureaux d'une entreprise à Paris; Bureaux d'une entreprise à Asnières près de Paris; J. Perrot, Architect il plans *Arch d'aujourd'hui* 29: XV, XIX F '58
Two stories, open court.

Centre Provincial de Gueldre à Arnhem; J. J. Vegter and H. Brouwer; *Arch d'aujourd'hui* 28:42-3 F '57 Four stories, no elevators, monumental stairway, entrance through interior court. Hunderd Meter High Building, Dusseldorf; Helmuth Hentrich; *Arch Rev* 119:151 Mr '56

Twenty five stories, played front and back. Compared with Pirelli Building in Milan.

Immeuble de bureaux à Com Italia; V. Fuglia, Architect il plans diags *Arch d'aujourd'hui* 29:94-5 F '58 Five stories, irregular site.

Immeuble de bureaux à Helsinki; A. Aalto; *Arch d'aujourd'hui* 28: 70-3 F '57; *Arch Rev* 121:256-7 Ap '57

Eight stories, 5 elevators, deep reveals, vertical composition, reinforced concrete; court design horizontal composition; central hall with round skylights and balconies; shops on ground floor at 2 levels.

Immeuble de bureaux à Ivry; O. Vaudon and J. P. Jausserand, Architects views and plan. *Arch d'aujourd'hui* 28:7 S '57

Immeuble de bureaux, Zurich; W. Stucheli; *Arch d'aujourd'hui* 27: 14-6 D '56

Nine stories, 3 elevators, front and rear walls glass, end walls with 1 window per floor.

Immeuble Pirelli; G. Ponti, Nervi and A. Danusso; *Arch d'aujourd'hui* 27:1-5 Mr '56; *Arch Rec* 120: 155-64 D '56; *Arch Rev* 119:81 F '56

Thirty stories, 6 elevators, ground area 7200 square meters, parking area 3650 square meters, usable area 17,533 square meters. Discussion of theory of design.

Offices at Rheinhafen, Germany. Hentrich and Pertschnigg, Architects il plans *Arch Rev* 123:196 Mr '58

Seven stories, part of foundry group.

Prefecture de l'Eure, Evreux, France; H. Pottier, Architect il plans *Arch d'aujourd'hui* 28: 95-7 D '57

Three stories and high basement. Federal Office Building, Little Rock; Swaim & Allen & Associates, and Ginocchio-Cromwell & Associates, Architects. Preliminary drawings displayed in G.S.A. Building, Washington, D. C.

Federal Office Building No. 6; Faulkner, Kingsbury & Stenhouse; Chatelain, Gauger & Nolan, Architects. Preliminary drawings displayed in G.S.A. Building, Washington, D. C.

Federal Office Building No. 8, Naramore, Bain, Brady & Johnson, Architects Preliminary drawings displayed in G.S.A. Building, Washington, D. C.

Federal Office Building No. 10 Holabird & Root & Burgee, and Carroll, Grisdale & Van Alen, Architects. Preliminary drawings displayed in G.S.A. Building, Washington, D. C.

Interest in federal lease-purchase program reviving as G.S.A. accepts 4.74 to 5% financing offers. *Arch Forum* 108:9 + Ja '58 Lease-purchase of federal office buildings halted, but Post Office plans a \$40 million program. *Arch Forum* 106: 5-6 Mr '57; 108:8 My '58

Public Building Design; *Arch Forum* 104:16 Ja '56 Recommendations of architects and contractors for simplified design, better and less expensive buildings. Block type with artificial illumination and air conditioning with widths up to 250 feet, lower ceilings, high velocity air and smaller ducts, reduced live load, pre-stressed concrete, masonry walls, limited glass, 5-foot corridors, careful location of elevators, corridors and service. In post offices use television in place of inspectors galleries.

Public use; award citations. il plans diags *Progres Arch* 39:116-19 Ja '58

Progressive Architecture 5th Annual Design Awards.

U. S. Military Personnel Records Center; Hellmuth, Yamasaki and Leinweber; *Arch Rec* 120:140-7 Ag '56

Architectural timing, preliminary study 20 weeks, design development 15 weeks, working drawings 40 weeks, total 75 weeks. Cost \$12.5 million, 1,349,148 square feet in 6 stories (1/2 size of Empire State). Reinforced concrete with concrete block walls, aluminum windows, asphalt tile floors (also cement and terrazzo), air conditioned, 1 elevator, escalator.

U. S. Post Office and Federal Building, Portsmouth, Va.; Oliver & Smith and T. David Fitz-Gibbon, Architects Preliminary drawings on display in G.S.A. Building, Washington, D. C.

What kind of architecture for public buildings? il *Arch Rec* 122:12 plus N '57

Central Intelligence Agency, Langley, Va; Bureau of Old-Age and Survivors Insurance, Baltimore; Department of State Building Extension; Post Office and Court House, Omaha. Exhibition by A.I.A.

c. South America

American design to brighten Bogota: Esso building; L. Douglass, Architect il plans diags *Arch Rec* 123:165-70 Mr '58 No sun shades, east and west sides glass, north and south ends solid.

Edifice Marques do Herval à Rio de Janeiro; Marcello Roberto and Mauricio Roberto; *Arch d'aujourd'hui* 27:154 O '56

Twenty one stories, L-shaped typical floor; adjustable exterior hanging louvers on one street side; spiral driveway.

d. Asia

Edifices Publics à Nobeoka; Kakegawa, Kobe et Hiroshima; Nikken, Sekkei and Komu; *Arch d'aujourd'hui* 27:39 My '56

Immeuble de bureaux, Sydney; H. Seidler; *Arch d'aujourd'hui* 27:28-9 D '56; *Arch Rev* 120: 86-7 Ag '56

Adjustable vertical aluminum vanes for sun screen.

Immeuble de Readers Digest à Tokyo, A. Raymond; *Arch d'aujourd'hui* 27:85 My '56

Two story and basement with patio and cafeteria.

Two story with glass wall and court.

B. Government Office Buildings (alphabetically by titles)

Architecture for the Department of State; exhibition at the Octagon. il *ALA Journal* XXIX No 5 238-9 My '58

Campus Plan for New York State Office Buildings; Ketchum, Gina and Sharp, Unger and Unger; *Arch Forum* 106:136-41 Ap '57

Three miles from capitol; to be built in 5 stages (complete at each stage); series of open courts with no through traffic, widely dispersed small parking lots at building corners, service buildings outside of loop road.

Central Intelligence Agency; Harrison & Abramovitz, *Progres Arch* 38:64 Ja '57

Four story plus penthouse at Langley, Va. F. Gutheim in Washington Report says best of new Federal buildings, 1/2 size of Pentagon but too big. A campus plan with height variations more interesting. Has 4 pieces of sculpture and landscaped courts. Too much timidity and compromise factory-like. Foreign buildings for State Department are much better. Court House and Federal office Building, Oklahoma City, Oklahoma; Dow Gurnerson, Architect Preliminary drawings on display in G.S.A. Building Washington, D. C.

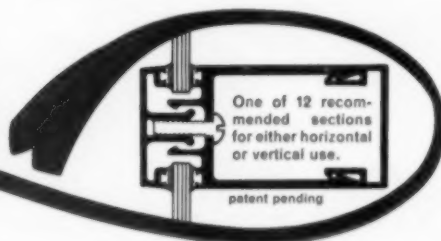
Court House and Federal Building, Sacramento, California; Harry J. Devine, Herbert Goodpastor, and Franceschi, Dreyfuss, Rickey & Brooks, Architects; Preliminary drawing displayed in G.S.A. Building in Washington, D. C.

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Contractor: McClain Construction Company, Philadelphia.

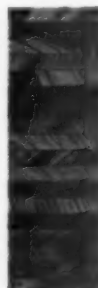


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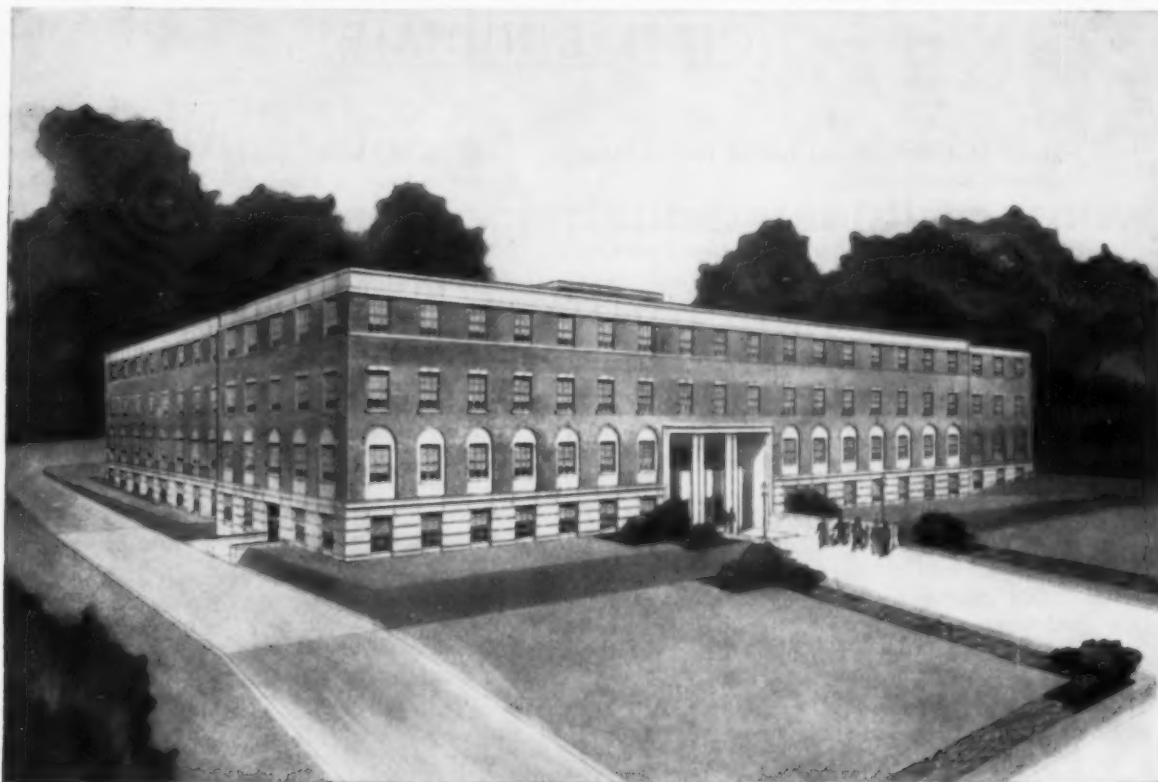
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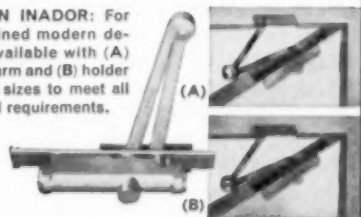


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Dept. AIA-49 • Berrien Springs, Michigan

CALENDAR

March 15-April 5: Annual Tour of Historic Homes, Charleston, South Carolina.

April 1: 28th Annual Meeting of the Inter-Society Color Council, Hotel Statler Hilton, New York City.

April 6-8: BRI Eighth Annual Meeting, Penn-Sheraton Hotel, Pittsburgh, Pennsylvania.

April 6: Panel on Architecture in the Southwest, University of Arizona, Tucson, Arizona.

April 18-25: Historic Garden Week in Virginia, sponsored by the Garden Club of Virginia.

April 24-25: Great Lakes Regional Conference, College of Architecture and Design, Ann Arbor, Michigan.

April 25-May 10: 22nd Annual Maryland House and Garden Pilgrimage.

May 1-7: Annual Convention, Royal Australian Institute of Architects, Brisbane, Queensland.

May 10: Closing date for projects for Idea Contest for Belgian Congo Cultural Center. Additional information from Centre Culturel du Congo Belge, 28 Avenue Marnix, Brussels, Belgium.

May 20-21: BRI Conference on Building Illumination, Statler Hilton Hotel, Cleveland, Ohio.

May 22-27: South Atlantic Regional Conference (Cruise to Nassau), Charleston, South Carolina.

June 10-13: British Architects' Conference, Cardiff, Wales.

June 22-26: AIA Annual Convention, Roosevelt Hotel, New Orleans, Louisiana.

July: Meeting of Housing Commission of the UIA, Moscow, U.S.S.R. Details of all UIA activities from M. Pierre Vago, 15 Quais Malaquais, Paris.

June 30: Tile Contractors Association Convention, Chicago, Illinois.

September 22-23: North Central States Regional Conference, Milwaukee, Wisconsin.

September 30-October 2: Producers' Council Annual Convention, Chase-Park Plaza Hotel, St. Louis, Mo.

October 7-14: California Council Convention, Hawaiian Village Hotel, Honolulu, T.H.

October 14-16: Texas Society of Architects Annual Convention, Austin, Texas.

October 20-30: Annual Convention, Architectural Institute of Japan, Kyoto and Osaka.

October 23-24: 14th Annual Meeting and Forum, Pennsylvania Society of Architects, Galen Hall Hotel, Wernersville, Pennsylvania.

Necrology

According to notices received at The Octagon between February 1, 1959 and February 26, 1959

COURTNEY, JOSEPH B., Norfolk, Virginia

INSCHO, CHARLES L., Columbus, Ohio

JEHLE, EMIL G., Detroit, Mich.

KUNI, WILLIAM, Detroit, Mich.

MARKS, JOHN G., JR., Pittsburgh, Penna.

PASS, GEORGE JR., Mankota, Minn.

RUEGER, CHARLES V., Tacoma, Wash.

RUNTZ, ALEOYS M., Portland, Ore.

YOUNG, ERNEST W., South Bend, Ind.



Vinyl floors:

7 important characteristics, useful to know

All types of vinyl floors have certain common characteristics. The following facts are offered by Armstrong to help familiarize architects with these general traits. Armstrong Cork Company can provide such information without partiality because it makes all basic types of vinyl flooring materials.*

The data in this article may also prove useful in explaining to clients why vinyl floors are specified instead of other, and often less expensive, resilient floors.

Here are seven important and useful things to know about vinyl floors:

1—Unusually wide range of designs available

Vinyl, being thermoplastic, can be processed into particles of almost any shape and made to retain those shapes. As a result, all sorts of design effects can be manufactured with vinyl floors. There are monolithic styles kindred to terrazzos, mosaics, and marbles . . . floors with delicately speckled grainings and large-scale designs . . . effects heretofore unobtainable in other flooring materials.

Recently, floors made with translucent and transparent vinyl (Armstrong Opalesq Vinyl Tile and the Tessera Series in Armstrong Vinyl Corlon are two of the latest) have attracted favorable attention. Translucent vinyl gives floors extraordinary depth effects, light refractions, and unique decorative beauty.

2—Brighter, more permanent colors

The use of practically colorless vinyl as a binder permits pigments to show in superior clarity and brilliance, even to the extent of bright or burnished metallic effects. Expressed conversely, the clear vinyl does not mask or cloud the color pigments. Moreover, the vinyl affords better protection for the pigments than most other resilient flooring binders; hence, greater resistance to the effects of chemicals and other harmful substances.

3—Can be used over all types of subfloors

It is well known that vinyl-asbestos and homogeneous vinyl tiles can be installed over subfloors on grade and below grade, as well as above grade. The new alkali-resistant Armstrong Hydrocord Back permits, for the first time ever, the use of sheet flooring, six feet wide, on and below grade as well as above grade. This exclusive backing is available only on Armstrong Vinyl Corlon.

4—Superior surface resistance permits specialized applications

Vinyl floors provide very good service under a wide variety of severe wearing conditions. While lighter colors are susceptible to staining from some foreign substances, excellent resistance to grease, alkalis, detergents, some solvents, some acids and many chemicals makes vinyl floors most suitable for hospitals, schools, cafeterias, commercial and residential

kitchens. And Armstrong Custom Corlon Tile—a unique type of homogeneous vinyl flooring—is recommended as the best resilient floor yet developed for chemical laboratories, although not completely impervious to harm.

5—Ultra-smooth surface and high density ease maintenance

Vinyl flooring materials, except when an embossed or textured face is deliberately sought, have extraordinarily smooth surfaces due to lack of porosity—smoother, in fact, than any other flooring surfaces. This makes cleaning, waxing, and day-to-day upkeep quick, easy, and economical. And because vinyl floors provide superior surface resistance, special cleaning jobs are seldom necessary.

6—Durability and indentation resistance also excellent

Vinyl is, by nature, exceptionally tough and high in tensile strength. So vinyl flooring materials give superior service under very exacting daily wear. And most types have very good resistance to indentation from furniture and other moving and static loads. This is a valuable asset for any interior and, combined with the higher abrasion resistance vinyl floors provide, is especially important for heavy-traffic areas.

7—What about costs?

"Raw" vinyl itself is expensive, so a general rule of thumb is that the higher the vinyl content the higher the price of the flooring material. However, other factors contribute importantly to cost, such as slower, more complicated manufacturing processes to achieve dimensional stability and certain style effects. As an example of cost range: Armstrong Excelon Tile costs as little as 35¢ per sq. ft. installed; Armstrong Opalesq Vinyl Tile costs up to \$2.75 per sq. ft. installed. Other Armstrong vinyl floors are between these two extremes.

Armstrong Architectural-Builders Consultants will be glad to help you choose the one (be it vinyl or another type of resilient floor) that is most suitable for each interior. Since Armstrong is the one company that makes every type of resilient floor, these flooring experts have no "favorites" and can make unbiased recommendations. They can also get you technical and design assistance from the Armstrong Research and Development Center and Bureau of Interior Decoration. Call your Armstrong District Office or write direct to Armstrong Cork Company, Floor Division, Lancaster, Pennsylvania.

Armstrong
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FLOOR DIVISION • LANCASTER, PENNSYLVANIA

* The three basic categories of vinyl floors, and their Armstrong trade names, are: **vinyl-asbestos tile**, a compound of vinyl resins and asbestos fibers; Armstrong Excelon Tile; **vinyl sheet material**, a compound of vinyl resins, pigments, and fillers supported by rag-felt or asbestos fiber backing; Armstrong Vinyl Corlon; **homogeneous vinyl tile**, a compound of vinyl resins, pigments, and fillers unsupported—no backing; Armstrong Custom Corlon Tile and Opalesq Vinyl Tile. Armstrong and other manufacturers make additional products with vinyl components which, for two reasons, are excluded from this article; either they are merely protected by a thin lamination of clear vinyl or they are usually laid loose as floor coverings rather than installed floors.

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For complete specifications, see: Sweet's
Architectural File 24b-Mut



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- ABRASIVE CAST TREADS**: A square tile with a grid pattern.
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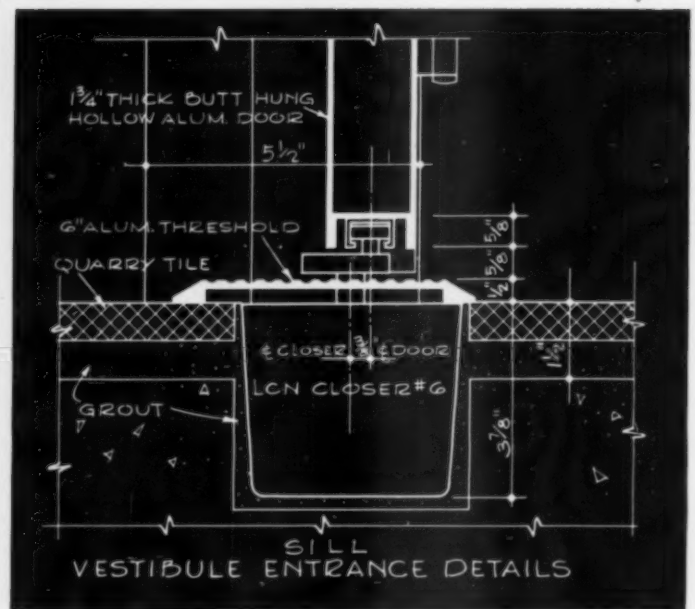
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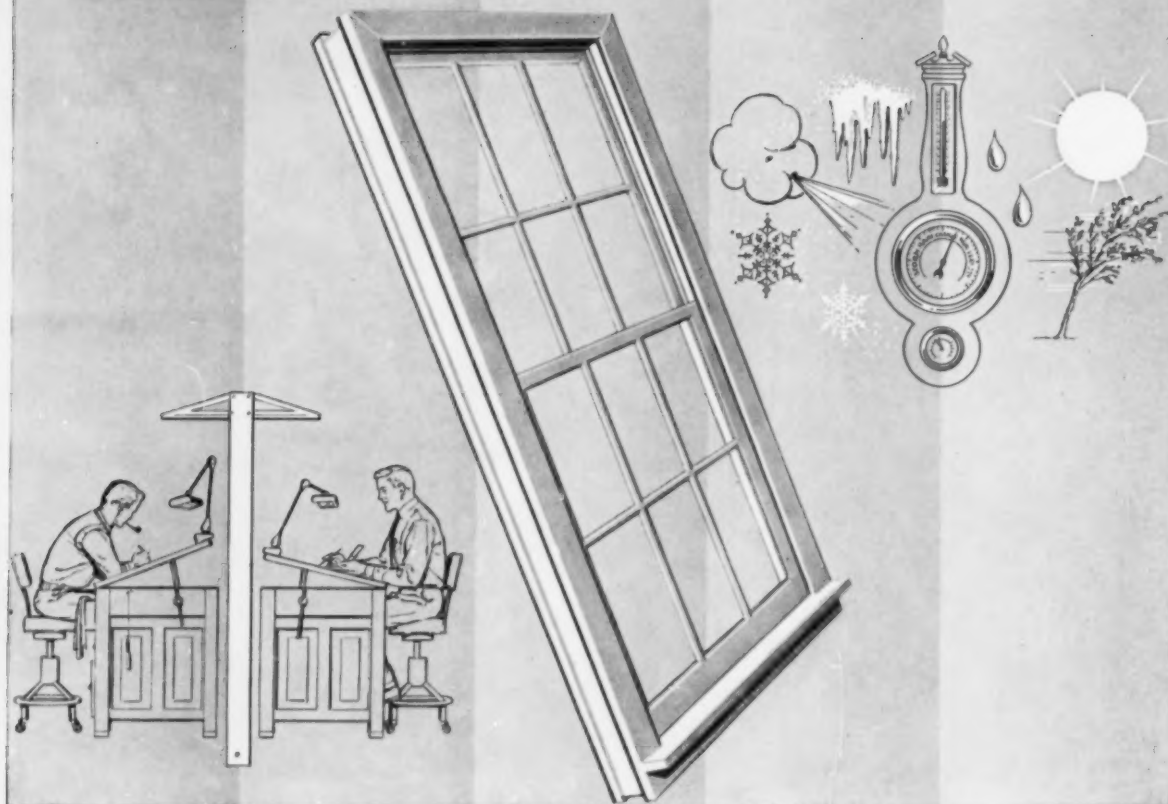
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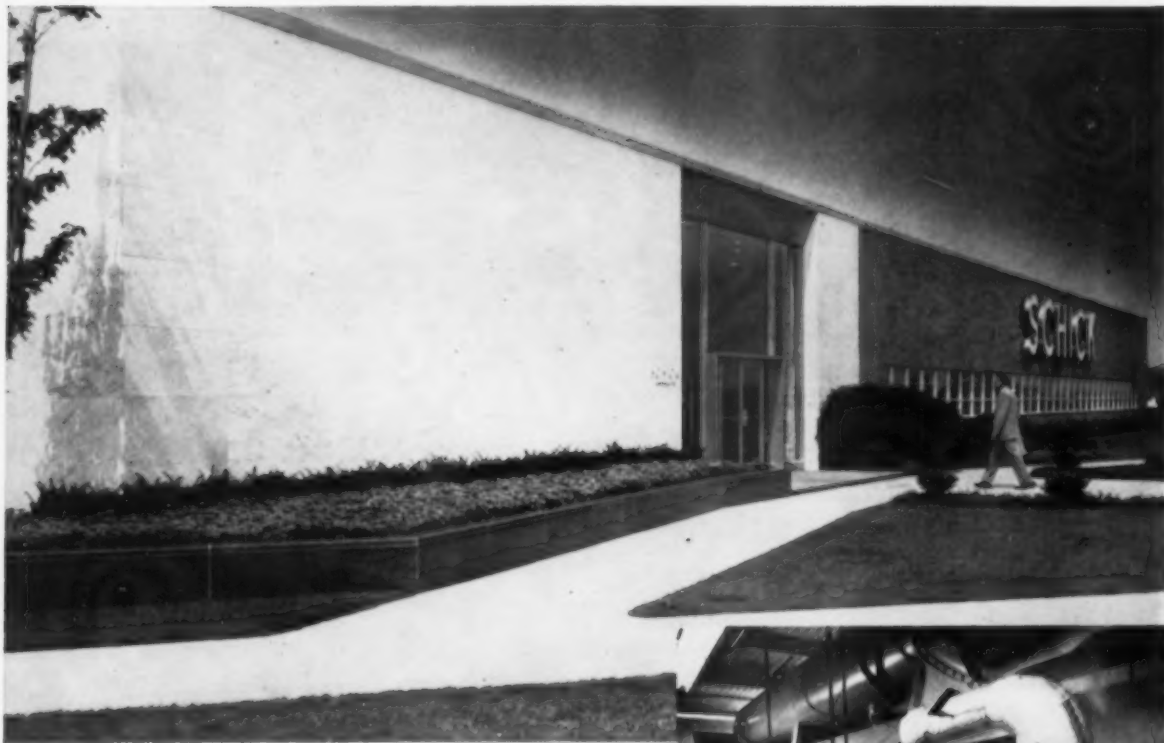


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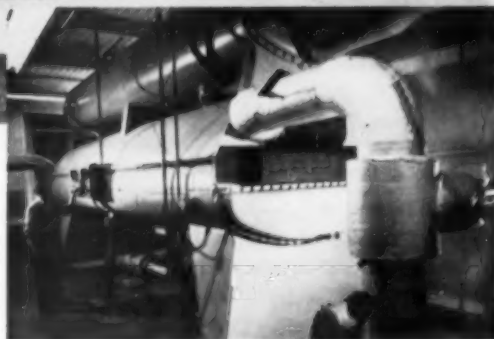
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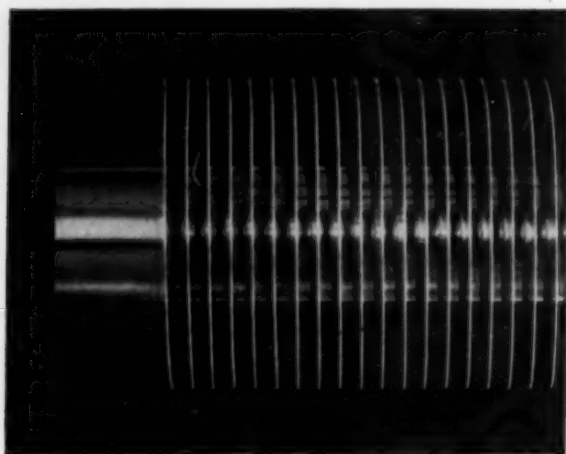
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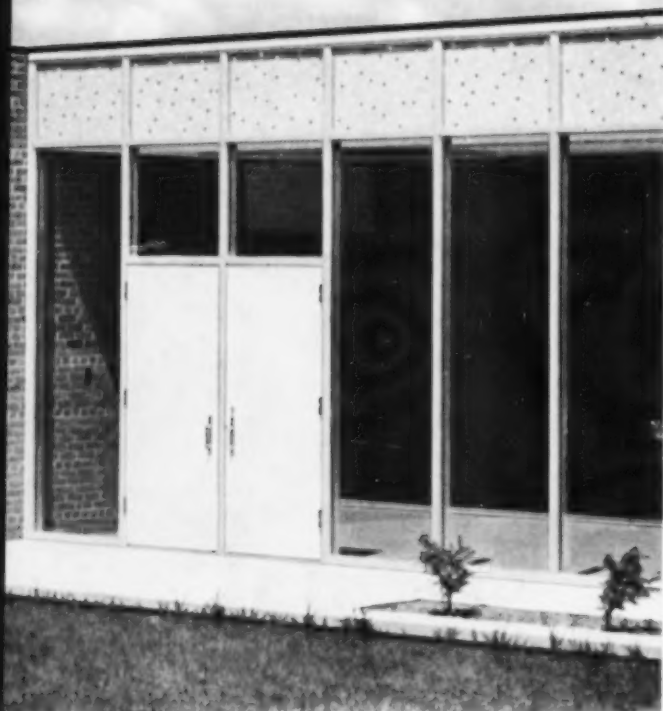


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